

CATALOG 2009

TENGEN BEARING COMPANY



ANGULAR CONTACT BALL BEARINGS
Catalog No. CA1200

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FOREWORD

We would like to thank you for your interest of our catalog 2009, after months of researches and preparations, we are proud to publish this catalog for all our valued customers. We promise we have contributed our best efforts ensuring the correctness, accuracy and completeness of information made available in this catalog. We sincerely hope this publish will help to fill your needs.

The main objective of this catalog is to act as a bearing handbook for bearings substitution from one brand to a product of China. We assure that bearings which are listed in this catalog are within the competitive edge of China market, which means that they are technically established, available in stocks or within the shortest possible delivery lead-time, and lowest requirement of minimum order. Bearing numbers that are not listed in this book might probably available too, please contact us for further information if your bearing numbers are not listed.

The reason why we design this catalog in a way of bearings interchangeability, having few main internationally renowned brands lined up for comparison, is intending to save our customers' hassles when they are looking for bearings substitutions in China. More brands of bearings' numbers will be added for comparison in future version of this catalog. We believe with information published in this book, in cooperation with our professional product consultation, we certainly are the Ease of Buying Solution for you to source from China.

Note:

Relevant information of bearings such as Basic Load Ratings, Speed Ratings, Factor, Bearings Weight and etc... published here are extracted from one manufacturers' catalog, these statistics may not be applicable for all brands of bearings, please use these information for reference purpose only.

ABOUT THE COMPANY

TENGEN Bearing Company is established by a group of people who possess vast experiences, professional knowledge of bearings, and bearings' industrial applications. Most of our managers and engineers have been in the bearings market for over 10 years and now closely tightened up with the Chinese market and being constantly updated about the local market information. This has consequently granted us the exclusive access to the rich market resources from around the China regions, and that enabling us the great advantages in aspect of both cost and quality of products.

Locally in China, we are not only dealing with Chinese bearings. We are also a reseller of most internationally renowned brands of bearings such as SKF, FAG, NSK, TIMKEN and etc... This provides us the capability and greater technical knowledge of bearings exchangeability in China market.

OUR MISSION

“We aim to be one of the most preferred Chinese bearings suppliers to all our customers and potential customers worldwide”

FREQUENTLY APPLIED TECHNICAL DATA OF BEARINGS

Bearings Tolerance Class
Bearings Tolerance Symbols
Tolerance Tables
Bearings Series Symbols
Bearings Supplementary Designations

BEARINGS TOLERANCES CLASSES

Types of Bearings		Tolerance Classes				
Deep Groove Ball Bearings		Normal	Class 6	Class 5	Class 4	Class 2
Angular Contact Ball Bearings		Normal	Class 6	Class 5	Class 4	Class 2
Self-aligning Ball Bearings		Normal	Class 6 equivalent	Class 5 equivalent	—	—
Cylindrical Roller Bearings		Normal	Class 6	Class 5	Class 4	Class 2
Solid Type Needle Roller Bearings		Normal	Class 6	Class 5	Class 4	—
Spherical Roller Bearings		Normal	Class 6 equivalent	Class 5 equivalent	—	—
Thrust Ball Bearings		Normal	Class 6	Class 5	Class 4	—
Spherical Thrust Roller Bearings		Normal	—	—	—	—
Metric-design Tapered Roller Bearings		Normal Class 6X	—	Class 5	Class 4	—
Inch-design Tapered Roller Bearings		ABMA CLASS 4	ABMA CLASS 2	ABMA CLASS 3	ABMA CLASS 0	ABMA CLASS 00
Equivalent standards						
GB/T 307.1 Chinese National Standard		Class 0	Class 6	Class 5	Class 4	Class 2
JIS B1514 Japanese Industrial Standard		Class 0	Class 6	Class 5	Class 4	Class 2
DIN 620 (Deutsches Institut für Normung) German Institute for Standardization		P0	P6	P5	P4	P2
ABMA American Bearing Manufacturers Association	Ball Bearings	ABEC 1	ABEC 3	ABEC 5 (CLASS 5P)	ABEC 7 (CLASS 7P)	ABEC 9 (CLASS 9P)
	Roller Bearings	RBEC 1	RBEC 3	RBEC 5	—	—
	Tapered Roller Bearings	CLASS 4	CLASS 2	CLASS 3	CLASS 0	CLASS 00

Note

1. The most common bearings produced in China are basically Normal Class, in accordance to JIS standard at class zero. (please refer to ISO 492/199/582/ABEC1/GB/T307.1 P0 for detailed requirements of bearings tolerance) You may also obtain detailed bearings tolerance statistics from manufacturers' catalog.
2. Bearings may be produced at Class 6 upon requested by customers for relatively rigid applications. Please contact our sales personnel for detailed information before placing an order.

BEARING TOLERANCES

Symbols of Boundary Dimension and Running Accuracy

d	<i>Nominal bearing bore diameter</i>
Δ_{ds}	<i>Deviation of single bore diameter</i>
Δ_{dmp}	<i>Deviation of mean bore diameter in a single plane</i>
V_{dp}	<i>Variation of mean bore diameter in a single plane</i>
V_{dmp}	<i>Variation of mean bore diameter</i>
B	<i>Nominal inner ring width</i>
Δ_{Bs}	<i>Deviation of single ring width</i>
V_{Bs}	<i>Variation of single ring width</i>
K_{ia}	<i>Radial runout of inner ring of assembled bearing</i>
S_d	<i>Runout of inner ring face to the bore</i>
S_{ia}	<i>Axial runout of end face to inner ring raceway of assembled bearing</i>
S_i / S_e	<i>Variation of washer thickness of (shaft / housing) locating washers</i>
T	<i>Nominal bearing height of a single direction axial bearing</i>
D	<i>Nominal bearing outer diameter</i>
Δ_{Ds}	<i>Deviation of single outer diameter</i>
Δ_{Dmp}	<i>Deviation of mean outer diameter in a single plane</i>
V_{Dp}	<i>Variation of single outer diameter in a single plane</i>
V_{Dmp}	<i>Variation of mean outer diameter</i>
C	<i>Nominal outer ring width</i>
Δ_{Cs}	<i>Deviation of single outer ring width</i>
V_{Cs}	<i>Variation of outer ring width</i>
K_{ea}	<i>Radial runout of outer ring of assembled bearing</i>
S_D	<i>Runout of outer ring outside surface generatrix to the face</i>
S_{ea}	<i>Axial runout of end face to outer ring raceway of assembled bearing</i>

Tolerance Tables (Part 1)

<i>d</i> (mm)		Δ_{dmp} Deviation of Mean Bore Diameter										units : μm	
		Normal		Class 6		Class 5		Class 4		Class 2			
Over	Incl.	High	Low	High	Low	High	Low	High	Low	High	Low		
0.6	2.5	0	-8	0	-7	0	-5	0	-4	0	-2.5		
2.5	10	0	-8	0	-7	0	-5	0	-4	0	-2.5		
10	18	0	-8	0	-7	0	-5	0	-4	0	-2.5		
18	30	0	-10	0	-8	0	-6	0	-5	0	-2.5		
30	50	0	-12	0	-10	0	-8	0	-6	0	-2.5		
50	80	0	-15	0	-12	0	-9	0	-7	0	-4		
80	120	0	-20	0	-15	0	-10	0	-8	0	-5		
120	150	0	-25	0	-18	0	-13	0	-10	0	-7		
150	180	0	-25	0	-18	0	-13	0	-10	0	-7		
180	250	0	-30	0	-22	0	-15	0	-12	0	-8		
250	315	0	-35	0	-25	0	-18	-	-	-	-		
315	400	0	-40	0	-30	0	-23	-	-	-	-		
400	500	0	-45	0	-35	-	-	-	-	-	-		
500	630	0	-50	0	-40	-	-	-	-	-	-		
630	800	0	-75	-	-	-	-	-	-	-	-		
800	1,000	0	-100	-	-	-	-	-	-	-	-		
1,000	1,250	0	-125	-	-	-	-	-	-	-	-		
1,250	1,600	0	-160	-	-	-	-	-	-	-	-		
1,600	2,000	0	-200	-	-	-	-	-	-	-	-		

<i>d</i> (mm)		V_{dmp} Variation of Mean Bore Diameter					Δ_{Bs} (or Δ_{Cs}) Deviation of Single (Outer) Ring Width												units : μm	
		Normal	Class 6	Class 5	Class 4	Class 2	Single Bearing						Combined Bearings							
							Normal Class 6		Class 5 Class 4		Class 2		Normal Class 6		Class 5 Class 4		Class 2			
Over	Incl.	Max	Max	Max	Max	Max	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low		
0.6	2.5	6	5	3	2	1.5	0	-40	0	-40	0	-40	0	-40	-	-	0	-250	0	-250
2.5	10	6	5	3	2	1.5	0	-120	0	-40	0	-40	0	-40	0	-250	0	-250	0	-250
10	18	6	5	3	2	1.5	0	-120	0	-80	0	-80	0	-80	0	-250	0	-250	0	-250
18	30	8	6	3	2.5	1.5	0	-120	0	-120	0	-120	0	-120	0	-250	0	-250	0	-250
30	50	9	8	4	3	1.5	0	-120	0	-120	0	-120	0	-120	0	-250	0	-250	0	-250
50	80	11	9	5	3.5	2	0	-150	0	-150	0	-150	0	-150	0	-380	0	-250	0	-250
80	120	15	11	5	4	2.5	0	-200	0	-200	0	-380	0	-380	0	-380	0	-380	0	-380
120	150	19	14	7	5	3.5	0	-250	0	-250	0	-250	0	-250	0	-500	0	-380	0	-380
150	180	19	14	7	5	3.5	0	-250	0	-250	0	-250	0	-250	0	-500	0	-380	0	-380
180	250	23	17	8	6	4	0	-300	0	-300	0	-300	0	-300	0	-500	0	-500	0	-500
250	315	26	19	9	-	-	0	-350	0	-350	-	-	0	-500	0	-500	-	-	-	-
315	400	30	23	12	-	-	0	-400	0	-400	-	-	0	-630	0	-630	-	-	-	-
400	500	34	26	-	-	-	0	-450	-	-	-	-	-	-	-	-	-	-	-	-
500	630	38	30	-	-	-	0	-500	-	-	-	-	-	-	-	-	-	-	-	-
630	800	-	-	-	-	-	0	-750	-	-	-	-	-	-	-	-	-	-	-	-
800	1,000	-	-	-	-	-	0	-1,000	-	-	-	-	-	-	-	-	-	-	-	-
1,000	1,250	-	-	-	-	-	0	-1,250	-	-	-	-	-	-	-	-	-	-	-	-
1,250	1,600	-	-	-	-	-	0	-1,600	-	-	-	-	-	-	-	-	-	-	-	-
1,600	2,000	-	-	-	-	-	0	-2,000	-	-	-	-	-	-	-	-	-	-	-	-

Tolerance Tables (Part 2)

<i>units : μm</i>		K_{ia} Radial runout of inner ring of assembled bearing					S_d Runout of inner ring face to the bore			S_{ia} Axial runout of end face to inner ring raceway of assembled bearing		
		Class 0	Class 6	Class 5	Class 4	Class 2	Class 5	Class 4	Class 2	Class 5	Class 4	Class 2
Over	Incl	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
0.6	2.5	10	5	4	2.5	1.5	7	3	1.5	7	3	1.5
2.5	10	10	6	4	2.5	1.5	7	3	1.5	7	3	1.5
10	18	10	7	4	2.5	1.5	7	3	1.5	7	3	1.5
18	30	13	8	4	3	2.5	8	4	1.5	8	4	2.5
30	50	15	10	5	4	2.5	8	4	1.5	8	4	2.5
50	80	20	10	5	4	2.5	8	5	1.5	8	5	2.5
80	120	25	13	6	5	2.5	9	5	2.5	9	5	2.5
120	150	30	18	8	6	2.5	10	6	2.5	10	7	2.5
150	180	30	18	8	6	5	10	6	4	10	7	5
180	250	40	20	10	8	5	11	7	5	13	8	5
250	315	50	25	13	-	-	13	-	-	15	-	-
315	400	60	30	15	-	-	15	-	-	20	-	-
400	500	65	35	-	-	-	-	-	-	-	-	-
500	630	70	40	-	-	-	-	-	-	-	-	-
630	800	80	-	-	-	-	-	-	-	-	-	-
800	1,000	90	-	-	-	-	-	-	-	-	-	-
1,000	1,250	100	-	-	-	-	-	-	-	-	-	-
1,250	1,600	120	-	-	-	-	-	-	-	-	-	-
1,600	2,000	140	-	-	-	-	-	-	-	-	-	-

<i>D (mm)</i>		Δ_{Dmp} Deviation of mean outer diameter in a single plane										<i>units : μm</i>	
		Normal		Class 6		Class 5		Class 4		Class 2		High	Low
Over	Incl.	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
2.5	6	0	-8	0	-7	0	-5	0	-4	0	-2.5	0	-2.5
6	18	0	-8	0	-7	0	-5	0	-4	0	-2.5	0	-2.5
18	30	0	-9	0	-8	0	-6	0	-5	0	-4	0	-4
30	50	0	-11	0	-9	0	-7	0	-6	0	-4	0	-4
50	80	0	-13	0	-11	0	-9	0	-7	0	-4	0	-4
80	120	0	-15	0	-13	0	-10	0	-8	0	-5	0	-5
120	150	0	-18	0	-15	0	-11	0	-9	0	-5	0	-5
150	180	0	-25	0	-18	0	-13	0	-10	0	-7	0	-7
180	250	0	-30	0	-20	0	-15	0	-11	0	-8	0	-8
250	315	0	-35	0	-25	0	-18	0	-13	0	-8	0	-8
315	400	0	-40	0	-28	0	-20	0	-15	0	-10	0	-10
400	500	0	-45	0	-33	0	-23	-	-	-	-	-	-
500	630	0	-50	0	-38	0	-28	-	-	-	-	-	-
630	800	0	-75	0	-45	0	-35	-	-	-	-	-	-
800	1,000	0	-100	0	-60	-	-	-	-	-	-	-	-
1,000	1,250	0	-125	-	-	-	-	-	-	-	-	-	-
1,250	1,600	0	-160	-	-	-	-	-	-	-	-	-	-
1,600	2,000	0	-200	-	-	-	-	-	-	-	-	-	-
2,000	2,500	0	-250	-	-	-	-	-	-	-	-	-	-

Tolerance Tables (Part 3)

<i>units : μm</i>		Δ_{Dmp}					K_{ea}					S_D		
		Deviation of mean outer diameter in a single plane					Radial runout of outer ring of assembled bearing					Runout of outer ring outside surface generatrix to the face		
		D (mm)		Normal	Class 6	Class 5	Class 4	Class 2	Normal	Class 6	Class 5	Class 4	Class 2	Class 5
Over	Incl.	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max	Max
2.5	6	6	5	3	2	1.5	15	8	5	3	1.5	8	4	1.5
6	18	6	5	3	2	1.5	15	8	5	3	1.5	8	4	1.5
18	30	7	6	3	2.5	2	15	9	6	4	2.5	8	4	1.5
30	50	8	7	4	3	2	20	10	7	5	2.5	8	4	1.5
50	80	10	8	5	3.5	2	25	13	8	5	4	8	4	1.5
80	120	11	10	5	4	2.5	35	18	10	6	5	9	5	2.5
120	150	14	11	6	5	2.5	40	20	11	7	5	10	5	2.5
150	180	19	14	7	5	3.5	45	23	13	8	5	10	5	2.5
180	250	23	15	8	6	4	50	25	15	10	7	11	7	4
250	315	26	19	9	7	4	60	30	18	11	7	13	8	5
315	400	30	21	10	8	5	70	35	20	13	8	13	10	7
400	500	34	25	12	-	-	80	40	23	-	-	15	-	-
500	630	38	29	14	-	-	100	50	25	-	-	18	-	-
630	800	55	34	18	-	-	120	60	30	-	-	20	-	-
800	1,000	75	45	-	-	-	140	75	-	-	-	-	-	-
1,000	1,250	-	-	-	-	-	160	-	-	-	-	-	-	-
1,250	1,600	-	-	-	-	-	190	-	-	-	-	-	-	-
1,600	2,000	-	-	-	-	-	220	-	-	-	-	-	-	-
2,000	2,500	-	-	-	-	-	250	-	-	-	-	-	-	-

<i>units : μm</i>		S_{ea}			V_{Cs}		
		Axial runout of end face to outer ring raceway of assembled bearing			Variation of outer ring width		
		D (mm)		Class 5	Class 4	Class 2	Class 5
Over	Incl.	Max	Max	Max	Max	Max	Max
2.5	6	8	5	1.5	5	2.5	1.5
6	18	8	5	1.5	5	2.5	1.5
18	30	8	5	2.5	5	2.5	1.5
30	50	8	5	2.5	5	2.5	1.5
50	80	10	5	4	6	3	1.5
80	120	11	6	5	8	4	2.5
120	150	13	7	5	8	5	2.5
150	180	14	8	5	8	5	2.5
180	250	15	10	7	10	7	4
250	315	18	10	7	11	7	5
315	400	20	13	8	13	8	7
400	500	23	-	-	15	-	-
500	630	25	-	-	18	-	-
630	800	30	-	-	20	-	-
800	1,000	-	-	-	-	-	-
1,000	1,250	-	-	-	-	-	-
1,250	1,600	-	-	-	-	-	-
1,600	2,000	-	-	-	-	-	-
2,000	2,500	-	-	-	-	-	-

BEARINGS SERIES SYMBOLS

Types of Bearings	Bearing Series Symbols	Symbols Type	Dimension Symbols		Types of Bearings	Bearing Series Symbols	Symbols Type	Dimension Symbols		
			Width or Height Symbols	Symbols				Width or Height Symbols	Symbols	
Single-Row Deep Groove Ball Bearings	68	6	(1)	8	Single-Row Cylindrical Roller Bearings	NU10	NU	1	0	
	69	6	(1)	9		NU2	NU	(0)	2	
	60	6	(1)	0		NU22	NU	2	2	
	62	6	(0)	2		NU3	NU	(0)	3	
	63	6	(0)	3		NU23	NU	2	3	
Single Row Angular Contact Ball Bearings	79	7	(1)	9		NU4	NU	(0)	4	
	70	7	(1)	0		NJ2	NJ	(0)	2	
	72	7	(0)	2		NJ22	NJ	2	2	
	73	7	(0)	3		NJ3	NJ	(0)	3	
Self-Aligning Ball Bearings	12	1	(0)	2		NJ23	NJ	2	3	
	13	1	(0)	3		NJ4	NJ	(0)	4	
	22	(1)	2	2		NUP2	NUP	(0)	2	
	23	(1)	2	3		NUP22	NUP	2	2	
Spherical Roller Bearings	230	2	3	0		NUP3	NUP	(0)	3	
	231	2	3	1		NUP23	NUP	2	3	
	222	2	2	2		NUP4	NUP	(0)	4	
	232	2	3	2		N10	N	1	0	
	213(1)	2	0	3		N2	N	(0)	2	
	223	2	2	3		N3	N	(0)	3	
Thrust Ball Bearings	511	5	1	1		N4	N	(0)	4	
	512	5	1	2		NF2	NF	(0)	2	
	513	5	1	3		NF3	NF	(0)	3	
	514	5	1	4		NF4	NF	(0)	4	
	522	5	2	2		Double Row Cylindrical Roller Bearing	NNU49	NNU	4	9
	523	5	2	3			NN30	NNU	3	0
	524	5	2	4	Thrust Spherical Roller Bearings	292	2	9	2	
Taper Roller Bearings	329	3	2	9		293	2	9	3	
	320	3	2	0		294	2	9	4	
	330	3	3	0	Needle Roller Bearings	NA48	N/A	4	8	
	331	3	3	1		NA49	N/A	4	9	
	302	3	0	2		NA59	N/A	5	9	
	322	3	2	2		NA69	N/A	6	9	
	332	3	3	2	Note Numbers in "()" are normally omitted from the bearing numbers.					
	303	3	0	3						
	323	3	2	3						

BEARINGS SUPPLEMENTARY DESIGNATIONS

Frequently Used Suffixes of Bearing Numbers

Attribute	Supplementary Designation			
	Local	SKF	FAG	NSK
Contact Angle Symbol				
Standard contact angle of 30°	A			A
Standard contact angle of 25°	A5	ACD	E	A5
Standard contact angle of 40°	B	B	B	B
Standard contact angle of 15°	C	CD	C	C
Contact angle about 20° (only applied to Tapered Roller Bearings)	C			C
Contact angle about 28° (only applied to Tapered Roller Bearings)	D			D
Internal Design Symbol				
Internal design differs from standard	A	A	A	A
Smaller diameter of outer ring raceway, contact angle, and outer ring width of tapered roller bearings conform to ISO 355	J	X/Q	X	J
Material Symbol				
Case-hardened steel used in rings, rolling elements	G			G
Stainless steel used in rings, rolling elements	H		Z	H
Cage Symbol				
Machined brass cage	M	M	M	M
Synthetic resin cage	T	TN9	TV	T
Pressed steel cage	W	F	F	W
Without cage	V	V	V	V
External Features – Seals, Shields Symbol				
Shield on one side only	Z / ZS	Z	ZR	Z / ZS
Shield on both sides	ZZ / ZZS	2Z	2ZR	ZZ / ZZS
Contact rubber seal on one side only	D / DU	RS	RSR	D / DU
Contact rubber shield on both sides	DD / DDU	2RS	2RSR	DD / DDU
Non-contact rubber seal on one side only	V	RZ		V
Non-contact rubber seal on both sides	VV	2RZ		VV
Rings Design Symbol				
Tapered bore of inner ring (Taper 1:12)	K	K	K	K
Tapered bore of inner ring (Taper 1:30)	K30	K30	K30	K30
Notch or lubricating groove ring	E	E	E	E
Lubricating groove in outside surface and holes in outer ring	E4	E	S	E4
Snap ring groove in outer ring	N	N	N	N
Snap ring groove with snap ring in outer ring	NR	NR	NR	NR
Bearing Arrangement Symbol				
Back to back arrangement	DB	DB	UA	DB
Face to face arrangement	DF	DF	UO	DF
Tandem arrangement	DT	DT	UL	DT
Internal Clearance Symbol				
Clearance less than C2	C1	C1	C1	C1
Clearance less than CN	C2	C2	C2	C2
CN Clearance	CN	C0	C0	CN
Clearance greater than CN	C3	C3	C3	C3
Clearance greater than C3	C4	C4	C4	C4
Clearance greater than C4	C5	C5	C5	C5
Tolerance Class Symbol				
ISO normal (P0 is usually omitted from the bearing numbers)	P0	P0	P0	P0
ISO Class 6	P6	P6	P6	P6
ISO Class 5	P5	P5	P5	P5
ISO Class 4	P4	P4	P4	P4
ISO Class 2	P2			P2
Special Specification Symbol				
Working temperature lower than 150°C	X26	S0	S0	X26
Working temperature lower than 200°C	X28	S1	S1	X28
Working temperature lower than 250°C	X29	S2	S2	X29
Dimensional stabilizing treatment working temperature lower than 200°C	S11	S1	S1	S11

COMPETITIVE PRODUCTS & PRODUCTS GALLERY

COMPETITIVE PRODUCTS LIST

Below listed products are technically established, available in stock or within the shortest possible delivery lead-time, and lowest requirement of minimum order. Please contact us if you are looking for something out of the list.

Deep Groove Ball Bearings

- Single Row Deep Groove Ball Bearings
- Double Row Deep Groove Ball Bearings

Angular Contact Ball Bearings

- Single Row Angular Contact Ball Bearings
- Double Row Angular Contact Ball Bearings
- Four Point Contact Ball Bearings

Self-Aligning Ball Bearings

Spherical Roller Bearings

Thrust Ball Bearings

- Single Direction Thrust Ball Bearings
- Double Direction Thrust Ball Bearings

Thrust Spherical Roller Bearings

Cylindrical Roller Bearings

- Single Row Cylindrical Roller Bearings
- Double Row Cylindrical Roller Bearings
- Full Complement Type Cylindrical Roller Bearings
 - Full Complement Type Single Row Cylindrical Roller Bearings
 - Full Complement Type Double Row Cylindrical Roller Bearings

Tapered Roller Bearings

- Single Row Tapered Roller Bearings
- Double Row Tapered Roller Bearings

Needle Roller Bearings

- Needle Rollers & Cage Assemblies
- Drawn Cup Needle Roller Bearings
- Solid Needle Roller Bearings
- Cam Rollers
- Cam Followers

High Precision Bearings

- High Precision Angular Contact Ball Bearings
- Single Row High Precision Cylindrical Roller Bearings
- Double Row High Precision Cylindrical Roller Bearings

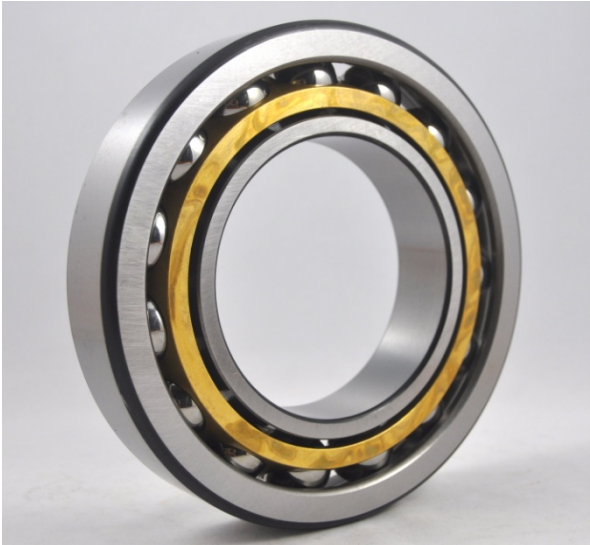
Bearing Units

- Pillow Type Units
 - UCP Series
 - UKT Series
- Square Four Bolt Flange Type Units
 - UCF Series
 - UKF Series
- Oval Flange Type Units
 - UCFL Series
 - UKFL Series
- Round Flange Cartridge Type Units
 - UCFC Series
 - UKFC Series
- Take Up Type Units
 - UCT Series
 - UKT Series
- Ball Bearing Inserts
 - UC, SB, SU Series
 - NA Series
 - ER, RB Series

PRODUCTS GALLERY



DEEP GROOVE BALL BEARINGS



ANGULAR CONTACT BALL BEARINGS



SELF-ALIGNING BALL BEARINGS



SPHERICAL ROLLER BEARINGS



THRUST BALL BEARINGS



THRUST SPHERICAL ROLLER BEARINGS



CYLINDRICAL ROLLER BEARINGS



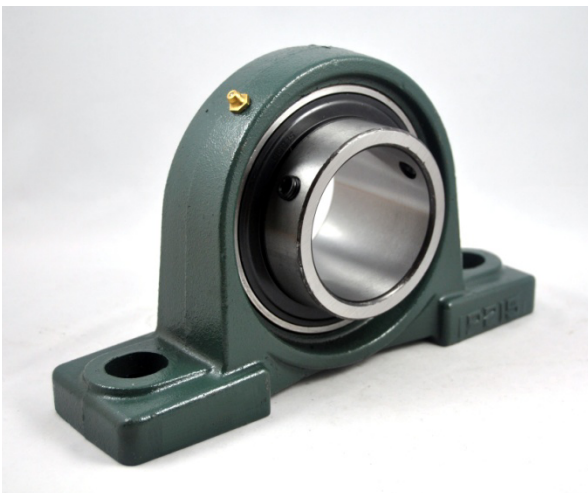
TAPERED ROLLER BEARINGS



NEEDLE ROLLER BEARINGS



HIGH PRECISION BEARINGS

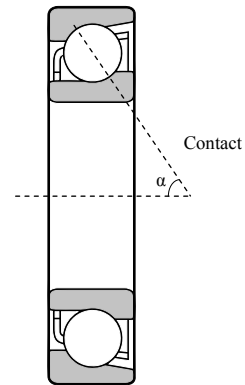


BEARING UNITS

BEARING TABLES

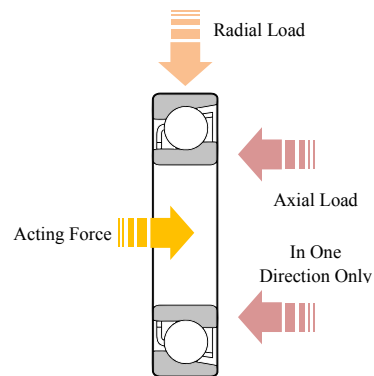
ANGULAR CONTACT BALL BEARINGS

The raceway between the inner and outer ring of an angular contact ball bearing has certain offset angle in the direction of the bearing axis. It attributes that it is designed to carry combined loads. The combined loads are the simultaneously acting radial and axial loads. The offset angle between the raceway of inner and outer rings creates a contact angle, the greater contact angle creates greater axial loads carrying capacity. The contact angle (α) is defined as the angle between the ball and the raceways at the radial plane. The angle of ball and raceways draw a line which perpendicular to the bearing axis, where the load is transmitted from one raceway to another along the line. Angular contact ball bearings are available in few different configurations, i.e. single row, double row, and four point contact ball bearings.



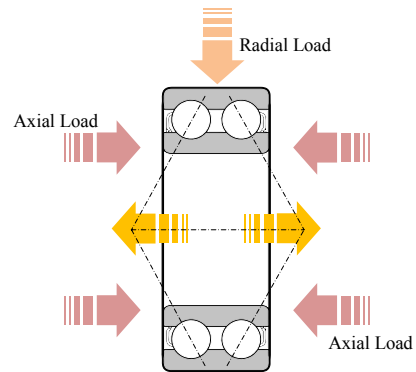
Single Row Angular Contact Ball Bearing

Single row angular contact ball bearings are design to accommodate acting axial loads in one direction only. An acting force in axial direction will be produced when the bearing is under radial loads, and this axial acting force must be balanced by a counter force. Due to this, single row angular contact ball bearings are normally fitted or paired against another bearing. The most common contact angle is a 40° , others larger contact angle are available such as 25° and 30° .



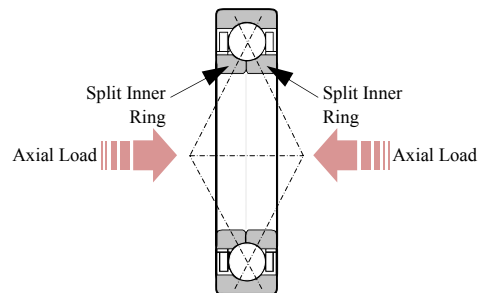
Double Row Angular Contact Ball Bearings

Double row angular contact ball bearings are basically a combination or back to back mounting of 2 pieces of single row angular contact ball bearings. This combination of bearings, double row angular contact ball bearings can accommodate radial loads, and axial loads acting in both directions.



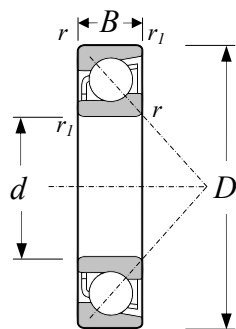
Four Point Contact Ball Bearings

Four point contact ball bearings have their inner rings split in to 2 pieces with a contact angle of normally 35° . Its' split inner rings enable a large number of balls to be integrated in the bearing and creating higher load carrying capacity. This design has overcome the shortage of single row angular contact bearings; they support axial loads acting in both directions. Another advantage of four point contact ball bearings is it takes up considerably less axial space than double row angular contact ball bearings.



ANGULAR CONTACT BALL BEARINGS Single Row

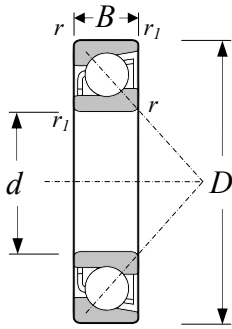
Table 20
Bore Diameter 10mm - 25mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	C	C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
10	30	9	7.02	3.35	30000	30000	0.03	7200 BT	7200 BECBP	7200 B.TVP.UA	7200 BT
10	30	9	7.02	3.35	30000	30000	0.03	7200 BT	7200 BEP	7200 B.TVP	7200 BT
12	32	10	7.61	3.8	26000	26000	0.036	7201 BT	7201 BECBP	7201 B.TVP.UA	7201 BT
12	32	10	7.61	3.8	26000	26000	0.036	7201 BT	7201 BEGAP	7201 B.TVP.UA	7201 BT
12	32	10	7.61	3.8	26000	26000	0.036	7201 BT	7201 BEP	7201 B.TVP	7201 BT
12	37	12	10.6	5	24000	24000	0.063	7301 BT	7301 BEP	7301 B.TVP	7301 BT
15	35	11	9.5	5.1	26000	26000	0.045	7202 BT	7202 BECBP	7202 B.TVP.UA	7202 BT
15	35	11	9.5	5.1	26000	26000	0.045	7202 BT	7202 BEGAP	7202 B.TVP.UA	7202 BT
15	35	11	9.5	5.1	26000	26000	0.045	7202 BT	7202 BEGBP	7202 B.JP.UA	7202 BT
15	35	11	8.84	4.8	24000	24000	0.045	7202 BT	7202 BEP	7202 B.TVP	7202 BT
15	42	13	13	6.7	20000	20000	0.081	7302 BT	7302 BECBP	7302 B.TVP.UA	7302 BT
15	42	13	13	6.7	20000	20000	0.081	7302 BT	7302 BEP	7302 B.TVP	7302 BT
17	40	12	11	5.85	22000	22000	0.07	7203 BM	7203 BECBM	7203 B.MP.UA	7203 BM
17	40	12	11	5.85	22000	22000	0.064	7203 BT	7203 BECBP	7203 B.TVP.UA	7203 BT
17	40	12	11	5.85	22000	22000	0.064	7203 BT	7203 BEGAP	7203 B.TVP.UA	7203 BT
17	40	12	10.4	5.5	20000	20000	0.064	7203 BT	7203 BEP	7203 B.TVP	7203 BT
17	40	12	11.1	6.1	20000	20000	0.064	7203 BM	7203 BEY	7203 B.MP	7203 BM
17	47	14	15.9	8.3	19000	19000	0.11	7303 BT	7303 BECBP	7303 B.TVP.UA	7303 BT
17	47	14	15.9	8.3	19000	19000	0.11	7303 BT	7303 BEGAP	7303 B.TVP.UA	7303 BT
17	47	14	15.9	8.3	19000	19000	0.11	7303 BT	7303 BEP	7303 B.TVP	7303 BT
20	47	14	13.3	7.65	18000	19000	0.11	7204 BM	7204 BECBM	7204 B.MP.UA	7204 BM
20	47	14	14.3	8.15	19000	19000	0.11	7204 BT	7204 BECBP	7204 B.TVP.UA	7204 BT
20	47	14	14	8.3	18000	18000	0.11	7204 BW	7204 BECBY	7204 B.JP.UA	7204 BW
20	47	14	14.3	8.15	19000	19000	0.11	7204 BT	7204 BEGAP	7204 B.TVP.UA	7204 BT
20	47	14	14.3	8.15	19000	19000	0.11	7204 BT	7204 BEGBP	7204 B.JP.UA	7204 BT
20	47	14	13.3	7.65	18000	18000	0.11	7204 BT	7204 BEP	7204 B.TVP	7204 BT
20	52	15	19	10	18000	18000	0.15	7304 BM	7304 BECBM	7304 B.MP.UA	7304 BM
20	52	15	19	10	18000	18000	0.14	7304 BT	7304 BECBP	7304 B.TVP.UA	7304 BT
20	52	15	19	10.4	16000	16000	0.15	7304 BW	7304 BECBY	7304 B.JP.UA	7304 BW
20	52	15	19	10	18000	18000	0.14	7304 BT	7304 BEGAP	7304 B.TVP.UA	7304 BT
20	52	15	19	10	18000	18000	0.14	7304 BT	7304 BEGBP	7304 B.JP.UA	7304 BT
20	52	15	17.4	9.5	16000	16000	0.14	7304 BT	7304 BEP	7304 B.TVP	7304 BT
20	52	15	19	10.4	16000	16000	0.15	7304 BM	7304 BEY	7304 B.MP	7304 BM
25	52	15	15.6	10	17000	17000	0.14	7205 BM	7205 BECBM	7205 B.MP.UA	7205 BM
25	52	15	15.6	10	17000	17000	0.13	7205 BT	7205 BECBP	7205 B.TVP.UA	7205 BT
25	52	15	15.6	10.2	15000	15000	0.13	7205 BW	7205 BECBY	7205 B.JP.UA	7205 BW
25	52	15	15.6	10	17000	17000	0.13	7205 BT	7205 BEGAP	7205 B.TVP.UA	7205 BT
25	52	15	15.6	10.2	15000	15000	0.13	7205 BM	7205 BEGAY	7205 B.MP.UA	7205 BM
25	52	15	15.6	10.2	15000	15000	0.13	7205 BM	7205 BEGBY	7205 B.MP.UA	7205 BM
25	52	15	15.6	10	17000	17000	0.13	7205 BT	7205 BEGCP	7205 B.TVP.UA	7205 BT
25	52	15	14.8	9.3	15000	15000	0.13	7205 BT	7205 BEP	7205 B.TVP	7205 BT
25	52	15	15.6	10.2	15000	15000	0.13	7205 BM	7205 BEY	7205 B.MP	7205 BM
25	62	17	26.5	15.3	15000	15000	0.24	7305 BM	7305 BECBM	7305 B.MP.UA	7305 BM
25	62	17	26.5	15.3	15000	15000	0.23	7305 BT	7305 BECBP	7305 B.TVP.UA	7305 BT
25	62	17	26	15.6	14000	14000	0.24	7305 BW	7305 BECBY	7305 B.JP.UA	7305 BW
25	62	17	26.5	15.3	15000	15000	0.23	7305 BT	7305 BEGAP	7305 B.TVP.UA	7305 BT
25	62	17	26	15.6	14000	14000	0.24	7305 BM	7305 BEGBY	7305 B.MP.UA	7305 BM
25	62	17	24.2	14	14000	14000	0.23	7305 BT	7305 BEP	7305 B.TVP	7305 BT
25	62	17	26	15.6	14000	14000	0.24	7305 BM	7305 BEY	7305 B.MP	7305 BM
25	80	21	39.7	23.6	11000	11000	0.61	7405 BM	7405 BECBM	7405 B.MP.UA	7405 BM

ANGULAR CONTACT BALL BEARINGS Single Row

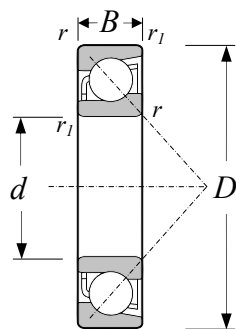
Table 21
Bore Diameter 25mm - 40mm



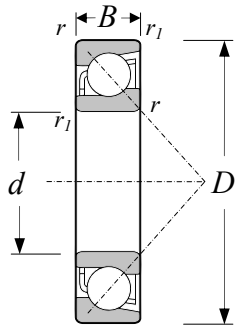
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm	mm	mm	kN		r/min		kg				
25	80	21	39.7	23.6	11000	11000	0.61	7405 BM	7405 BGAM	7405 B.MP	7405 BM
25	80	21	39.7	23.6	11000	11000	0.61	7405 BM	7405 BM	7405 B.MP	7405 BM
30	62	16	24	15.6	14000	14000	0.21	7206 BM	7206 BECBM	7206 B.MP.UA	7206 BM
30	62	16	24	15.6	14000	14000	0.19	7206 BT	7206 BECBP	7206 B.TVP.UA	7206 BT
30	62	16	23.8	15.6	13000	13000	0.21	7206 BW	7206 BECBY	7206 B.JP.UA	7206 BW
30	62	16	24	15.6	14000	14000	0.19	7206 BT	7206 BEGAP	7206 B.TVP.UA	7206 BT
30	62	16	23.8	15.6	13000	13000	0.21	7206 BM	7206 BEGAY	7206 B.MP.UA	7206 BM
30	62	16	24	15.6	14000	14000	0.19	7206 BT	7206 BEGBP	7206 B.JP.UA	7206 BT
30	62	16	23.8	15.6	13000	13000	0.21	7206 BM	7206 BEGBY	7206 B.MP.UA	7206 BM
30	62	16	22.5	14.3	13000	13000	0.19	7206 BT	7206 BEP	7206 B.TVP	7206 BT
30	62	16	23.8	15.6	13000	13000	0.21	7206 BM	7206 BEY	7206 B.MP	7206 BM
30	72	19	35.5	21.2	13000	13000	0.37	7306 BM	7306 BECBM	7306 B.MP.UA	7306 BM
30	72	19	35.5	21.2	13000	13000	0.33	7306 BT	7306 BECBP	7306 B.TVP.UA	7306 BT
30	72	19	34.5	21.2	12000	12000	0.37	7306 BW	7306 BECBY	7306 B.JP.UA	7306 BW
30	72	19	35.5	21.2	13000	13000	0.37	7306 BM	7306 BEGAM	7306 B.MP.UA	7306 BM
30	72	19	35.5	21.2	13000	13000	0.33	7306 BT	7306 BEGAP	7306 B.TVP.UA	7306 BT
30	72	19	35.5	21.2	13000	13000	0.37	7306 BM	7306 BEGBM	7306 B.MP.UA	7306 BM
30	72	19	35.5	21.2	13000	13000	0.33	7306 BT	7306 BEGBP	7306 B.JP.UA	7306 BT
30	72	19	34.5	21.2	12000	12000	0.37	7306 BM	7306 BEGBY	7306 B.MP.UA	7306 BM
30	72	19	32.5	19.3	12000	12000	0.33	7306 BT	7306 BEP	7306 B.TVP	7306 BT
30	72	19	34.5	21.2	12000	12000	0.37	7306 BM	7306 BEY	7306 B.MP	7306 BM
30	90	23	47.5	29	10000	10000	0.85	7406 BM	7406 BECBM	7406 B.MP.UA	7406 BM
30	90	23	47.5	29	10000	10000	0.85	7406 BM	7406 BM	7406 B.MP	7406 BM
35	72	17	31	20.8	12000	12000	0.3	7207 BM	7207 BECBM	7207 B.MP.UA	7207 BM
35	72	17	31	20.8	12000	12000	0.28	7207 BT	7207 BECBP	7207 B.TVP.UA	7207 BT
35	72	17	30.7	20.8	11000	11000	0.3	7207 BW	7207 BECBY	7207 B.JP.UA	7207 BW
35	72	17	31	20.8	12000	12000	0.3	7207 BM	7207 BEGAM	7207 B.MP.UA	7207 BM
35	72	17	31	20.8	12000	12000	0.28	7207 BT	7207 BEGAP	7207 B.TVP.UA	7207 BT
35	72	17	30.7	20.8	11000	11000	0.3	7207 BM	7207 BEGAY	7207 B.MP.UA	7207 BM
35	72	17	31	20.8	12000	12000	0.28	7207 BT	7207 BEGBP	7207 B.JP.UA	7207 BT
35	72	17	30.7	20.8	11000	11000	0.3	7207 BM	7207 BEGBY	7207 B.MP.UA	7207 BM
35	72	17	29.1	19	11000	11000	0.28	7207 BT	7207 BEP	7207 B.TVP	7207 BT
35	72	17	30.7	20.8	11000	11000	0.3	7207 BM	7207 BEY	7207 B.MP	7207 BM
35	80	21	41.5	26.5	11000	11000	0.49	7307 BM	7307 BECBM	7307 B.MP.UA	7307 BM
35	80	21	41.5	26.5	11000	11000	0.45	7307 BT	7307 BECBP	7307 B.TVP.UA	7307 BT
35	80	21	39	24.5	10000	10000	0.49	7307 BW	7307 BECBY	7307 B.JP.UA	7307 BW
35	80	21	41.5	26.5	11000	11000	0.45	7307 BT	7307 BEGAP	7307 B.TVP.UA	7307 BT
35	80	21	41.5	26.5	11000	11000	0.45	7307 BT	7307 BEGBP	7307 B.JP.UA	7307 BT
35	80	21	39	24.5	10000	10000	0.45	7307 BT	7307 BEP	7307 B.TVP	7307 BT
35	80	21	39	24.5	10000	10000	0.49	7307 BM	7307 BEY	7307 B.MP	7307 BM
35	100	25	60.5	38	8500	9000	1.1	7407 BM	7407 BECBM	7407 B.MP.UA	7407 BM
35	100	25	60.5	38	8500	9000	1.1	7407 BM	7407 BM	7407 B.MP	7407 BM
40	80	18	36.4	26	10000	10000	0.38	7208 BW	7208 BECBJ	7208 B.TVP.UA	7208 BW
40	80	18	36.5	26	11000	11000	0.39	7208 BM	7208 BECBM	7208 B.MP.UA	7208 BM
40	80	18	36.5	26	11000	11000	0.37	7208 BT	7208 BECBP	7208 B.TVP.UA	7208 BT
40	80	18	36.4	26	10000	10000	0.38	7208 BW	7208 BECBY	7208 B.JP.UA	7208 BW
40	80	18	36.5	26	11000	11000	0.39	7208 BM	7208 BEGAM	7208 B.MP.UA	7208 BM
40	80	18	36.5	26	11000	11000	0.37	7208 BT	7208 BEGAP	7208 B.TVP.UA	7208 BT
40	80	18	36.4	26	10000	10000	0.38	7208 BM	7208 BEGAY	7208 B.MP.UA	7208 BM
40	80	18	36.4	26	10000	10000	0.38	7208 BM	7208 BEGBY	7208 B.MP.UA	7208 BM

ANGULAR CONTACT BALL BEARINGS Single Row

Table 22
Bore Diameter 40mm - 50mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
40	80	18	34.5	24	10000	10000	0.39	7208 BM	7208 BEM	7208 B.MP	7208 BM
40	80	18	34.5	24	10000	10000	0.37	7208 BT	7208 BEP	7208 B.TVP	7208 BT
40	80	18	36.4	26	10000	10000	0.38	7208 BM	7208 BEY	7208 B.MP	7208 BM
40	90	23	49.4	33.5	9000	9000	0.66	7308 BW	7308 BECBJ	7308 B.TVP.UA	7308 BW
40	90	23	50	32.5	10000	10000	0.68	7308 BM	7308 BECBM	7308 B.MP.UA	7308 BM
40	90	23	50	32.5	10000	10000	0.61	7308 BT	7308 BECBP	7308 B.TVP.UA	7308 BT
40	90	23	49.4	33.5	9000	9000	0.64	7308 BW	7308 BECBY	7308 B.JP.UA	7308 BW
40	90	23	49.4	33.5	9000	9000	0.64	7308 BM	7308 BECCY	7308 B.MP.UA	7308 BM
40	90	23	49.4	33.5	9000	9000	0.68	7308 BW	7308 BEGAF	7308 B.JP.UA	7308 BW
40	90	23	50	32.5	10000	10000	0.68	7308 BM	7308 BEGAM	7308 B.MP.UA	7308 BM
40	90	23	50	32.5	10000	10000	0.61	7308 BT	7308 BEGAP	7308 B.TVP.UA	7308 BT
40	90	23	50	32.5	10000	10000	0.68	7308 BM	7308 BEGBM	7308 B.MP.UA	7308 BM
40	90	23	50	32.5	10000	10000	0.61	7308 BT	7308 BEGBP	7308 B.JP.UA	7308 BT
40	90	23	49.4	33.5	9000	9000	0.64	7308 BM	7308 BEGBY	7308 B.MP.UA	7308 BM
40	90	23	46.2	30.5	9000	9000	0.61	7308 BT	7308 BEP	7308 B.TVP	7308 BT
40	90	23	49.4	33.5	9000	9000	0.64	7308 BM	7308 BEY	7308 B.MP	7308 BM
40	110	27	70.2	45	8000	8000	1.4	7408 BM	7408 BCBM	7408 B.MP.UA	7408 BM
40	110	27	70.2	45	8000	8000	1.4	7408 BM	7408 BGBM	7408 B.MP	7408 BM
40	110	27	70.2	45	8000	8000	1.4	7408 BM	7408 BM	7408 B.MP	7408 BM
45	85	19	37.7	28	9000	9000	0.43	7209 BW	7209 BECBJ	7209 B.TVP.UA	7209 BW
45	85	19	38	28.5	10000	10000	0.44	7209 BM	7209 BECBM	7209 B.MP.UA	7209 BM
45	85	19	38	28.5	10000	10000	0.42	7209 BT	7209 BECBP	7209 B.TVP.UA	7209 BT
45	85	19	37.7	28	9000	9000	0.43	7209 BW	7209 BECBY	7209 B.JP.UA	7209 BW
45	85	19	38	28.5	10000	10000	0.42	7209 BT	7209 BEGAP	7209 B.TVP.UA	7209 BT
45	85	19	37.7	28	9000	9000	0.43	7209 BM	7209 BEGAY	7209 B.MP.UA	7209 BM
45	85	19	37.7	28	9000	9000	0.43	7209 BM	7209 BEGBY	7209 B.MP.UA	7209 BM
45	85	19	35.8	26	9000	9000	0.42	7209 BT	7209 BEP	7209 B.TVP	7209 BT
45	85	19	37.7	28	9000	9000	0.43	7209 BM	7209 BEY	7209 B.MP	7209 BM
45	100	25	60.5	41.5	8000	8000	0.86	7309 BW	7309 BECBJ	7309 B.TVP.UA	7309 BW
45	100	25	61	40.5	9000	9000	0.9	7309 BM	7309 BECBM	7309 B.MP.UA	7309 BM
45	100	25	61	40.5	9000	9000	0.82	7309 BT	7309 BECBP	7309 B.TVP.UA	7309 BT
45	100	25	60.5	41.5	8000	8000	0.86	7309 BW	7309 BECBY	7309 B.JP.UA	7309 BW
45	100	25	61	40.5	9000	9000	0.82	7309 BT	7309 BEGAP	7309 B.TVP.UA	7309 BT
45	100	25	61	40.5	9000	9000	0.82	7309 BT	7309 BEGBP	7309 B.JP.UA	7309 BT
45	100	25	60.5	41.5	8000	8000	0.86	7309 BM	7309 BEGBY	7309 B.MP.UA	7309 BM
45	100	25	55.9	37.5	8000	8000	0.82	7309 BT	7309 BEP	7309 B.TVP	7309 BT
45	100	25	60.5	41.5	8000	8000	0.86	7309 BM	7309 BEY	7309 B.MP	7309 BM
45	120	29	85.2	55	7000	7500	1.8	7409 BM	7409 BCBM	7409 B.MP.UA	7409 BM
45	120	29	85.2	55	7000	7500	1.8	7409 BM	7409 BGBM	7409 B.MP	7409 BM
45	120	29	85.2	55	7000	7500	1.8	7409 BM	7409 BGM	7409 B.MP	7409 BM
50	90	20	39	30.5	8500	8500	0.47	7210 BW	7210 BECBJ	7210 B.TVP.UA	7210 BW
50	90	20	40	31	9000	9000	0.51	7210 BM	7210 BECBM	7210 B.MP.UA	7210 BM
50	90	20	40	31	9000	9000	0.47	7210 BT	7210 BECBP	7210 B.TVP.UA	7210 BT
50	90	20	39	30.5	8500	8500	0.47	7210 BW	7210 BECBY	7210 B.JP.UA	7210 BW
50	90	20	40	31	9000	9000	0.47	7210 BT	7210 BEGAP	7210 B.TVP.UA	7210 BT
50	90	20	37.7	28.5	8500	8500	0.47	7210 BT	7210 BEP	7210 B.TVP	7210 BT
50	90	20	39	30.5	8500	8500	0.47	7210 BM	7210 BEY	7210 B.MP	7210 BM
50	110	27	74.1	51	7500	7500	1.13	7310 BW	7310 BECBJ	7310 B.TVP.UA	7310 BW
50	110	27	75	51	8000	8000	1.16	7310 BM	7310 BECBM	7310 B.MP.UA	7310 BM
50	110	27	75	51	8000	8000	1.04	7310 BT	7310 BECBP	7310 B.TVP.UA	7310 BT



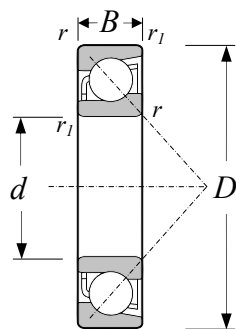
ANGULAR CONTACT BALL BEARINGS
Single Row

Table 23
Bore Diameter 50mm - 60mm

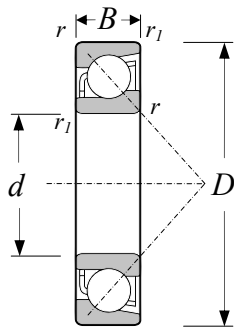
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min		kg				
50	110	27	74.1	51	7500	7500	1.13	7310 BW	7310 BECBY	7310 B.JP.UA	7310 BW
50	110	27	68.9	47.5	7500	7500	1.16	7310 BW	7310 BEGAF	7310 B.JP.UA	7310 BW
50	110	27	75	51	8000	8000	1.16	7310 BM	7310 BEGAM	7310 B.MP.UA	7310 BM
50	110	27	75	51	8000	8000	1.04	7310 BT	7310 BEGAP	7310 B.TVP.UA	7310 BT
50	110	27	74.1	51	7500	7500	1.13	7310 BM	7310 BEGAY	7310 B.MP.UA	7310 BM
50	110	27	75	51	8000	8000	1.04	7310 BT	7310 BEGBP	7310 B.JP.UA	7310 BT
50	110	27	74.1	51	7500	7500	1.13	7310 BM	7310 BEGBY	7310 B.MP.UA	7310 BM
50	110	27	68.9	47.5	7500	7500	1.04	7310 BT	7310 BEP	7310 B.TVP	7310 BT
50	110	27	74.1	51	7500	7500	1.13	7310 BM	7310 BEY	7310 B.MP.UA	7310 BM
50	130	31	95.6	64	6300	6700	2.25	7410 BM	7410 BCBM	7410 B.MP.UA	7410 BM
50	130	31	95.6	64	6300	6700	2.25	7410 BM	7410 BM	7410 B.MP	7410 BM
55	100	21	48.8	38	7500	7500	0.62	7211 BW	7211 BECBJ	7211 B.TVP.UA	7211 BW
55	100	21	49	40	8000	8000	0.66	7211 BM	7211 BECBM	7211 B.MP.UA	7211 BM
55	100	21	49	40	8000	8000	0.62	7211 BT	7211 BECBP	7211 B.TVP.UA	7211 BT
55	100	21	48.8	38	7500	7500	0.62	7211 BW	7211 BECBY	7211 B.JP.UA	7211 BW
55	100	21	49	40	8000	8000	0.62	7211 BT	7211 BEGAP	7211 B.TVP.UA	7211 BT
55	100	21	48.8	38	7500	7500	0.62	7211 BM	7211 BEGBY	7211 B.MP.UA	7211 BM
55	100	21	46.2	36	7500	7500	0.62	7211 BT	7211 BEP	7211 B.TVP	7211 BT
55	100	21	48.8	38	7500	7500	0.62	7211 BM	7211 BEY	7211 B.MP	7211 BM
55	120	29	85.2	60	6700	6700	1.48	7311 BW	7311 BECBJ	7311 B.TVP.UA	7311 BW
55	120	29	85	60	7000	7000	1.49	7311 BM	7311 BECBM	7311 B.MP.UA	7311 BM
55	120	29	85	60	7000	7000	1.34	7311 BT	7311 BECBP	7311 B.TVP.UA	7311 BT
55	120	29	85.2	60	6700	6700	1.48	7311 BW	7311 BECBY	7311 B.JP.UA	7311 BW
55	120	29	85	60	7000	7000	1.49	7311 BM	7311 BECCM	7311 B.MP.UA	7311 BM
55	120	29	85	60	7000	7000	1.49	7311 BM	7311 BEGAM	7311 B.MP.UA	7311 BM
55	120	29	85	60	7000	7000	1.34	7311 BT	7311 BEGAP	7311 B.TVP.UA	7311 BT
55	120	29	85.2	60	6700	6700	1.48	7311 BM	7311 BEGAY	7311 B.MP.UA	7311 BM
55	120	29	85	60	7000	7000	1.49	7311 BM	7311 BEGBM	7311 B.MP.UA	7311 BM
55	120	29	85.2	60	6700	6700	1.48	7311 BM	7311 BEGBY	7311 B.MP.UA	7311 BM
55	120	29	85.2	60	6700	6700	1.48	7311 BM	7311 BEGCY	7311 B.MP.UA	7311 BM
55	120	29	79.3	55	6700	6700	1.34	7311 BT	7311 BEP	7311 B.TVP	7311 BT
55	120	29	85.2	60	6700	6700	1.48	7311 BM	7311 BEY	7311 B.MP	7311 BM
55	140	33	111	76.5	6000	6300	2.75	7411 BM	7411 BCBM	7411 B.MP.UA	7411 BM
55	140	33	111	76.5	6000	6300	2.75	7411 BM	7411 BGAM	7411 B.MP	7411 BM
55	140	33	111	76.5	6000	6300	2.75	7411 BM	7411 BGBM	7411 B.MP	7411 BM
55	140	33	111	76.5	6000	6300	2.75	7411 BM	7411 BGM	7411 B.MP	7411 BM
55	140	33	111	76.5	6000	6300	2.75	7411 BM	7411 BM	7411 B.MP	7411 BM
60	110	22	57.2	45.5	7000	7000	0.83	7212 BW	7212 BECBJ	7212 B.TVP.UA	7212 BW
60	110	22	61	50	7500	7500	0.85	7212 BM	7212 BECBM	7212 B.MP.UA	7212 BM
60	110	22	61	50	7500	7500	0.78	7212 BT	7212 BECBP	7212 B.TVP.UA	7212 BT
60	110	22	57.2	45.5	7000	7000	0.83	7212 BW	7212 BECBY	7212 B.JP.UA	7212 BW
60	110	22	61	50	7500	7500	0.85	7212 BM	7212 BEGAM	7212 B.MP.UA	7212 BM
60	110	22	61	50	7500	7500	0.78	7212 BT	7212 BEGAP	7212 B.TVP.UA	7212 BT
60	110	22	61	50	7500	7500	0.78	7212 BT	7212 BEGBP	7212 B.JP.UA	7212 BT
60	110	22	57.2	45.5	7000	7000	0.78	7212 BT	7212 BEP	7212 B.TVP	7212 BT
60	110	22	57.2	45.5	7000	7000	0.83	7212 BM	7212 BEY	7212 B.MP	7212 BM
60	130	31	95.6	69.5	6000	6000	1.8	7312 BW	7312 BECBJ	7312 B.TVP.UA	7312 BW
60	130	31	104	76.5	6700	6700	1.88	7312 BM	7312 BECBM	7312 B.MP.UA	7312 BM
60	130	31	104	76.5	6700	6700	1.71	7312 BT	7312 BECBP	7312 B.TVP.UA	7312 BT
60	130	31	95.6	69.5	6000	6000	1.75	7312 BW	7312 BECBY	7312 B.JP.UA	7312 BW

ANGULAR CONTACT BALL BEARINGS Single Row

Table 24
Bore Diameter 60mm - 70mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min						
60	130	31	104	76.5	6700	6700	1.88	7312 BM	7312 BECCM	7312 B.MP.UA	7312 BM
60	130	31	104	76.5	6700	6700	1.88	7312 BM	7312 BEGAM	7312 B.MP.UA	7312 BM
60	130	31	104	76.5	6700	6700	1.71	7312 BT	7312 BEGAP	7312 B.TVP.UA	7312 BT
60	130	31	95.6	69.5	6000	6000	1.75	7312 BM	7312 BEGAY	7312 B.MP.UA	7312 BM
60	130	31	104	76.5	6700	6700	1.88	7312 BM	7312 BEGBM	7312 B.MP.UA	7312 BM
60	130	31	104	76.5	6700	6700	1.71	7312 BT	7312 BEGBP	7312 B.JP.UA	7312 BT
60	130	31	95.6	69.5	6000	6000	1.75	7312 BM	7312 BEGBY	7312 B.MP.UA	7312 BM
60	130	31	95.6	69.5	6000	6300	1.88	7312 BM	7312 BEM	7312 B.MP	7312 BM
60	130	31	95.6	69.5	6000	6000	1.71	7312 BT	7312 BEP	7312 B.TVP	7312 BT
60	130	31	95.6	69.5	6000	6000	1.75	7312 BM	7312 BEY	7312 B.MP	7312 BM
60	150	35	119	86.5	5600	5600	3.3	7412 BM	7412 BCBM	7412 B.MP.UA	7412 BM
60	150	35	119	86.5	5600	5600	3.3	7412 BM	7412 BGAM	7412 B.MP	7412 BM
60	150	35	119	86.5	5600	5600	3.3	7412 BM	7412 BM	7412 B.MP	7412 BM
65	120	23	66.3	54	6300	6300	1	7213 BW	7213 BECBJ	7213 B.TVP.UA	7213 BW
65	120	23	69.5	57	6700	6700	1.1	7213 BM	7213 BECBM	7213 B.MP.UA	7213 BM
65	120	23	69.5	57	6700	6700	1	7213 BT	7213 BECBP	7213 B.TVP.UA	7213 BT
65	120	23	66.3	54	6300	6300	1	7213 BW	7213 BECBY	7213 B.JP.UA	7213 BW
65	120	23	66.3	54	6300	6300	1.1	7213 BW	7213 BEGAF	7213 B.JP.UA	7213 BW
65	120	23	69.5	57	6700	6700	1	7213 BT	7213 BEGAP	7213 B.TVP.UA	7213 BT
65	120	23	66.3	54	6300	6300	1	7213 BM	7213 BEGAY	7213 B.MP.UA	7213 BM
65	120	23	66.3	54	6300	6300	1	7213 BT	7213 BEP	7213 B.TVP	7213 BT
65	120	23	66.3	54	6300	6300	1	7213 BM	7213 BEY	7213 B.MP	7213 BM
65	140	33	108	80	5600	5600	2.35	7313 BW	7313 BECBF	7313 B.TVP.UA	7313 BW
65	140	33	108	80	5600	5600	2.2	7313 BW	7313 BECBJ	7313 B.TVP.UA	7313 BW
65	140	33	116	86.5	6300	6300	2.31	7313 BM	7313 BECBM	7313 B.MP.UA	7313 BM
65	140	33	116	86.5	6300	6300	2.1	7313 BT	7313 BECBP	7313 B.TVP.UA	7313 BT
65	140	33	108	80	5600	5600	2.15	7313 BW	7313 BECBY	7313 B.JP.UA	7313 BW
65	140	33	116	86.5	6300	6300	2.31	7313 BM	7313 BECCM	7313 B.MP.UA	7313 BM
65	140	33	108	80	5600	5600	2.35	7313 BW	7313 BEGAF	7313 B.JP.UA	7313 BW
65	140	33	116	86.5	6300	6300	2.31	7313 BM	7313 BEGAM	7313 B.MP.UA	7313 BM
65	140	33	116	86.5	6300	6300	2.1	7313 BT	7313 BEGAP	7313 B.TVP.UA	7313 BT
65	140	33	116	86.5	6300	6300	2.31	7313 BM	7313 BEGBM	7313 B.MP.UA	7313 BM
65	140	33	116	86.5	6300	6300	2.1	7313 BT	7313 BEGBP	7313 B.JP.UA	7313 BT
65	140	33	108	80	5600	5600	2.15	7313 BM	7313 BEGBY	7313 B.MP.UA	7313 BM
65	140	33	108	80	5600	5600	2.1	7313 BT	7313 BEP	7313 B.TVP	7313 BT
65	160	37	130	96.5	5000	5300	3.85	7413 BM	7413 BCBM	7413 B.MP.UA	7413 BM
65	160	37	130	96.5	5000	5300	3.85	7413 BM	7413 BGAM	7413 B.MP	7413 BM
65	160	37	130	96.5	5000	5300	3.85	7413 BM	7413 BGBM	7413 B.MP	7413 BM
70	125	24	71.5	60	6000	6000	1.1	7214 BW	7214 BECBJ	7214 B.TVP.UA	7214 BW
70	125	24	72	60	6300	6300	1.18	7214 BM	7214 BECBM	7214 B.MP.UA	7214 BM
70	125	24	75	64	6300	6300	1.1	7214 BT	7214 BECBP	7214 B.TVP.UA	7214 BT
70	125	24	71.5	60	6000	6000	1.1	7214 BW	7214 BECBY	7214 B.JP.UA	7214 BW
70	125	24	72	60	6300	6300	1.18	7214 BM	7214 BEGAM	7214 B.MP.UA	7214 BM
70	125	24	75	64	6300	6300	1.1	7214 BT	7214 BEGAP	7214 B.TVP.UA	7214 BT
70	125	24	71.5	60	6000	6000	1.1	7214 BT	7214 BEP	7214 B.TVP	7214 BT
70	150	35	119	90	5300	5300	2.7	7314 BW	7314 BECBJ	7314 B.TVP.UA	7314 BW
70	150	35	127	98	5600	5600	2.83	7314 BM	7314 BECBM	7314 B.MP.UA	7314 BM
70	150	35	127	98	5600	5600	2.55	7314 BT	7314 BECBP	7314 B.TVP.UA	7314 BT
70	150	35	119	90	5300	5300	2.67	7314 BW	7314 BECBY	7314 B.JP.UA	7314 BW
70	150	35	119	90	5300	5300	2.83	7314 BW	7314 BEGAF	7314 B.JP.UA	7314 BW



ANGULAR CONTACT BALL BEARINGS

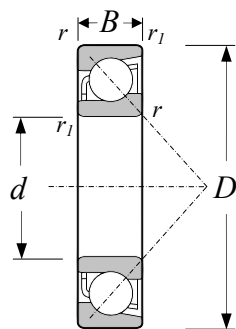
Single Row

Table 25
Bore Diameter 70mm - 85mm

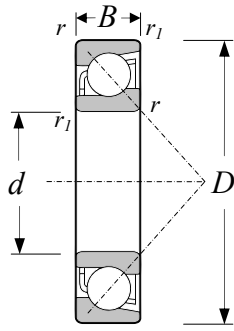
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm	mm	mm	kN		r/min		kg				
70	150	35	119	90	5300	5300	2.7	7314 BW	7314 BEGAJ	7314 B.JP.UA	7314 BW
70	150	35	127	98	5600	5600	2.83	7314 BM	7314 BEGAM	7314 B.MP.UA	7314 BM
70	150	35	127	98	5600	5600	2.55	7314 BT	7314 BEGAP	7314 B.TVP.UA	7314 BT
70	150	35	119	90	5300	5300	2.67	7314 BM	7314 BEGAY	7314 B.MP.UA	7314 BM
70	150	35	119	90	5300	5300	2.67	7314 BM	7314 BEGBY	7314 B.MP.UA	7314 BM
70	150	35	119	90	5300	5300	2.55	7314 BT	7314 BEP	7314 B.TVP	7314 BT
70	180	42	159	127	4500	4800	5	7414 BM	7414 BCBM	7414 B.MP.UA	7414 BM
70	180	42	159	127	4500	4800	5	7414 BM	7414 BGAM	7414 B.MP	7414 BM
75	130	25	72.8	64	5600	5600	1.26	7215 BW	7215 BECBJ	7215 B.TVP.UA	7215 BW
75	130	25	73.5	65.5	6300	6300	1.29	7215 BM	7215 BECBM	7215 B.MP.UA	7215 BM
75	130	25	73.5	65.5	6300	6300	1.18	7215 BT	7215 BECBP	7215 B.TVP.UA	7215 BT
75	130	25	72.8	64	5600	5600	1.26	7215 BW	7215 BECBY	7215 B.JP.UA	7215 BW
75	130	25	72.8	64	5600	5600	1.26	7215 BM	7215 BEGAY	7215 B.TVP.UA	7215 BM
75	130	25	70.2	60	5600	5600	1.18	7215 BT	7215 BEP	7215 B.TVP	7215 BT
75	160	37	133	106	5000	5000	3.2	7315 BW	7315 BECBJ	7315 B.TVP.UA	7315 BW
75	160	37	132	104	5300	5300	3.26	7315 BM	7315 BECBM	7315 B.MP.UA	7315 BM
75	160	37	132	104	5300	5300	3.06	7315 BT	7315 BECBP	7315 B.TVP.UA	7315 BT
75	160	37	133	106	5000	5000	3.2	7315 BW	7315 BECBY	7315 B.JP.UA	7315 BW
75	160	37	132	104	5300	5300	3.26	7315 BM	7315 BEGAM	7315 B.MP.UA	7315 BM
75	160	37	132	104	5300	5300	3.06	7315 BT	7315 BEGAP	7315 B.TVP.UA	7315 BT
75	160	37	125	98	5000	5000	3.06	7315 BT	7315 BEP	7315 B.TVP	7315 BT
75	190	45	168	140	4300	4500	6.85	7415 BM	7415 BCBM	7415 B.MP.UA	7415 BM
75	190	45	168	140	4300	4500	6.85	7415 BM	7415 BGAM	7415 B.MP	7415 BM
75	190	45	168	140	4300	4500	6.85	7415 BM	7415 BGBM	7415 B.MP	7415 BM
75	190	45	168	140	4300	4500	6.85	7415 BM	7415 BM	7415 B.MP	7415 BM
80	140	26	83.2	73.5	5300	5300	1.58	7216 BW	7216 BECBJ	7216 B.TVP.UA	7216 BW
80	140	26	85	75	5600	5600	1.59	7216 BM	7216 BECBM	7216 B.MP.UA	7216 BM
80	140	26	85	75	5600	5600	1.43	7216 BT	7216 BECBP	7216 B.TVP.UA	7216 BT
80	140	26	83.2	73.5	5300	5300	1.58	7216 BW	7216 BECBY	7216 B.JP.UA	7216 BW
80	140	26	80.6	69.5	5300	5300	1.6	7216 BW	7216 BEGAF	7216 B.JP.UA	7216 BW
80	140	26	85	75	5600	5600	1.59	7216 BM	7216 BEGAM	7216 B.MP.UA	7216 BM
80	140	26	85	75	5600	5600	1.43	7216 BT	7216 BEGAP	7216 B.TVP.UA	7216 BT
80	140	26	80.6	69.5	5300	5300	1.43	7216 BT	7216 BEP	7216 B.TVP	7216 BT
80	170	39	143	118	4500	4500	3.85	7316 BW	7316 BECBJ	7316 B.TVP.UA	7316 BW
80	170	39	143	118	5000	5000	4.03	7316 BM	7316 BECBM	7316 B.MP.UA	7316 BM
80	170	39	143	118	5000	5000	3.64	7316 BT	7316 BECBP	7316 B.TVP.UA	7316 BT
80	170	39	143	118	4500	4500	3.7	7316 BW	7316 BECBY	7316 B.JP.UA	7316 BW
80	170	39	143	118	5000	5000	4.03	7316 BM	7316 BECCM	7316 B.MP.UA	7316 BM
80	170	39	143	118	5000	5000	4.03	7316 BM	7316 BEGAM	7316 B.MP.UA	7316 BM
80	170	39	143	118	5000	5000	3.64	7316 BT	7316 BEGAP	7316 B.TVP.UA	7316 BT
80	170	39	143	118	4500	4500	3.7	7316 BM	7316 BEGAY	7316 B.MP.UA	7316 BM
80	170	39	143	118	4500	4500	3.7	7316 BM	7316 BEGBY	7316 B.MP.UA	7316 BM
80	170	39	135	110	4500	4800	4.03	7316 BM	7316 BEM	7316 B.MP	7316 BM
80	170	39	135	110	4500	4500	3.64	7316 BT	7316 BEP	7316 B.TVP	7316 BT
80	170	39	143	118	4500	4500	3.7	7316 BM	7316 BEY	7316 B.MP	7316 BM
80	200	48	178	153	4000	4300	8	7416 BM	7416 CBM	7416 B.MP	7416 BM
80	200	48	178	153	4000	4300	8	7416 BM	7416 GAM	7416 B.MP	7416 BM
80	200	48	178	153	4000	4300	8	7416 BM	7416 M	7416 B.MP	7416 BM
85	150	28	95.6	83	5000	5000	1.9	7217 BW	7217 BECBJ	7217 B.TVP.UA	7217 BW
85	150	28	95.6	83	5000	5300	1.99	7217 BM	7217 BECBM	7217 B.MP.UA	7217 BM

ANGULAR CONTACT BALL BEARINGS Single Row

Table 26
Bore Diameter 85mm - 95mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
85	150	28	102	90	5300	5300	1.83	7217 BT	7217 BECBP	7217 B.TVP.UA	7217 BT
85	150	28	95.6	83	5000	5000	1.83	7217 BW	7217 BECBY	7217 B.JP.UA	7217 BW
85	150	28	95.6	83	5000	5000	1.99	7217 BW	7217 BEGAF	7217 B.JP.UA	7217 BW
85	150	28	95.6	83	5000	5000	1.83	7217 BT	7217 BEP	7217 B.TVP	7217 BT
85	180	41	146	122	4300	4300	4.75	7317 BW	7317 BECBF	7317 B.TVP.UA	7317 BW
85	180	41	153	132	4300	4300	4.59	7317 BW	7317 BECBJ	7317 B.TVP.UA	7317 BW
85	180	41	156	132	4800	4800	4.74	7317 BM	7317 BECBM	7317 B.MP.UA	7317 BM
85	180	41	156	132	4800	4800	4.26	7317 BT	7317 BECBP	7317 B.TVP.UA	7317 BT
85	180	41	153	132	4300	4300	4.59	7317 BW	7317 BECBY	7317 B.JP.UA	7317 BW
85	180	41	156	132	4800	4800	4.74	7317 BM	7317 BECCM	7317 B.MP.UA	7317 BM
85	180	41	146	122	4300	4300	4.75	7317 BW	7317 BEGAF	7317 B.JP.UA	7317 BW
85	180	41	156	132	4800	4800	4.74	7317 BM	7317 BEGAM	7317 B.MP.UA	7317 BM
85	180	41	156	132	4800	4800	4.26	7317 BT	7317 BEGAP	7317 B.TVP.UA	7317 BT
85	180	41	153	132	4300	4300	4.59	7317 BM	7317 BEGBY	7317 B.MP.UA	7317 BM
85	180	41	146	112	4300	4500	4.74	7317 BM	7317 BEM	7317 B.MP	7317 BM
85	180	41	146	112	4300	4300	4.26	7317 BT	7317 BEP	7317 B.TVP	7317 BT
90	160	30	108	96.5	4500	4500	2.34	7218 BW	7218 BECBJ	7218 B.TVP.UA	7218 BW
90	160	30	108	96.5	4500	4800	2.41	7218 BM	7218 BECBM	7218 B.MP.UA	7218 BM
90	160	30	116	104	4800	4800	2.12	7218 BT	7218 BECBP	7218 B.TVP.UA	7218 BT
90	160	30	108	96.5	4500	4500	2.34	7218 BW	7218 BECBY	7218 B.JP.UA	7218 BW
90	160	30	108	96.5	4500	4800	2.41	7218 BM	7218 BECCM	7218 B.MP.UA	7218 BM
90	160	30	108	96.5	4500	4500	2.41	7218 BW	7218 BEGAF	7218 B.JP.UA	7218 BW
90	160	30	116	104	4800	4800	2.12	7218 BT	7218 BEGAP	7218 B.TVP.UA	7218 BT
90	160	30	108	96.5	4500	4500	2.41	7218 BW	7218 BEGBF	7218 B.JP.UA	7218 BW
90	160	30	108	96.5	4500	4500	2.12	7218 BT	7218 BEP	7218 B.TVP	7218 BT
90	190	43	165	146	4000	4000	5.22	7318 BW	7318 BECBJ	7318 B.TVP.UA	7318 BW
90	190	43	166	146	4500	4500	5.53	7318 BM	7318 BECBM	7318 B.MP.UA	7318 BM
90	190	43	166	146	4500	4500	4.98	7318 BT	7318 BECBP	7318 B.TVP.UA	7318 BT
90	190	43	165	146	4000	4000	5.22	7318 BW	7318 BECBY	7318 B.JP.UA	7318 BW
90	190	43	166	146	4500	4500	4.98	7318 BT	7318 BEGAP	7318 B.TVP.UA	7318 BT
90	190	43	165	146	4000	4000	5.22	7318 BM	7318 BEGAY	7318 B.MP.UA	7318 BM
90	190	43	156	134	4000	4300	5.53	7318 BM	7318 BEM	7318 B.MP	7318 BM
90	190	43	156	134	4000	4000	4.98	7318 BT	7318 BEP	7318 B.TVP	7318 BT
90	225	54	216	200	3600	3800	11.5	7418 BM	7418 CBM	7418 B.MP	7418 BM
90	225	54	216	200	3600	3800	11.5	7418 BM	7418 GAM	7418 B.MP	7418 BM
90	225	54	216	200	3600	3800	11.5	7418 BM	7418 GBM	7418 B.MP	7418 BM
90	225	54	216	200	3600	3800	11.5	7418 BM	7418 M	7418 B.MP	7418 BM
95	170	32	129	118	4800	4800	2.95	7219 BM	7219 BECBM	7219 B.MP.UA	7219 BM
95	170	32	129	118	4800	4800	2.68	7219 BT	7219 BECBP	7219 B.TVP.UA	7219 BT
95	170	32	124	108	4300	4300	2.82	7219 BW	7219 BECBY	7219 B.JP.UA	7219 BW
95	170	32	129	118	4800	4800	2.95	7219 BM	7219 BEGAM	7219 B.MP.UA	7219 BM
95	170	32	124	108	4300	4300	2.68	7219 BT	7219 BEP	7219 B.TVP	7219 BT
95	200	45	180	163	4300	4300	6.41	7319 BM	7319 BECBM	7319 B.MP.UA	7319 BM
95	200	45	180	163	4300	4300	5.77	7319 BT	7319 BECBP	7319 B.TVP.UA	7319 BT
95	200	45	178	163	3800	3800	6.17	7319 BW	7319 BECBY	7319 B.JP.UA	7319 BW
95	200	45	168	150	3800	3800	6.41	7319 BW	7319 BEGAF	7319 B.JP.UA	7319 BW
95	200	45	180	163	4300	4300	6.41	7319 BM	7319 BEGAM	7319 B.MP.UA	7319 BM
95	200	45	178	163	3800	3800	6.17	7319 BM	7319 BEGAY	7319 B.MP.UA	7319 BM
95	200	45	178	163	3800	3800	6.17	7319 BM	7319 BEGBY	7319 B.MP.UA	7319 BM
95	200	45	168	150	3800	4000	6.41	7319 BM	7319 BEM	7319 B.MP	7319 BM



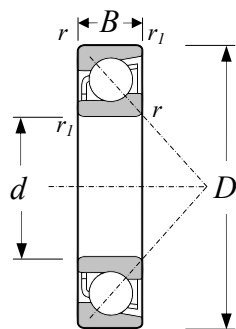
ANGULAR CONTACT BALL BEARINGS Single Row

Table 27
Bore Diameter 95mm - 120mm

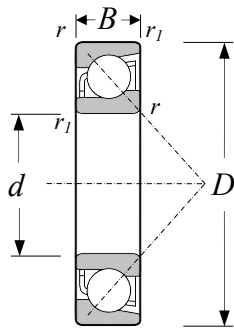
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
95	200	45	168	150	3800	3800	5.77	7319 BT	7319 BEP	7319 B.TVP	7319 BT
95	250	55	251	245	3400	3400	13.5	7419 BM	7419 CBM	7419 B.MP	7419 BM
95	250	55	251	245	3400	3400	13.5	7419 BM	7419 GAM	7419 B.MP	7419 BM
95	250	55	251	245	3400	3400	13.5	7419 BM	7419 M	7419 B.MP	7419 BM
100	180	34	135	122	4000	4300	3.61	7220 BM	7220 BECBM	7220 B.MP.UA	7220 BM
100	180	34	143	134	4500	4500	3.29	7220 BT	7220 BECBP	7220 B.TVP.UA	7220 BT
100	180	34	135	122	4000	4000	3.38	7220 BW	7220 BECBY	7220 B.JP.UA	7220 BW
100	180	34	135	122	4000	4300	3.61	7220 BM	7220 BECCM	7220 B.MP.UA	7220 BM
100	180	34	135	122	4000	4000	3.29	7220 BT	7220 BEP	7220 B.TVP	7220 BT
100	180	34	135	122	4000	4000	3.38	7220 BM	7220 BEY	7220 B.MP	7220 BM
100	215	47	216	208	4000	4000	8	7320 BM	7320 BECBM	7320 B.MP.UA	7320 BM
100	215	47	216	208	4000	4000	7.17	7320 BT	7320 BECBP	7320 B.TVP.UA	7320 BT
100	215	47	203	190	3600	3600	7.15	7320 BW	7320 BECBY	7320 B.JP.UA	7320 BW
100	215	47	216	208	4000	4000	8	7320 BM	7320 BECCM	7320 B.MP.UA	7320 BM
100	215	47	203	190	3600	3600	8	7320 BW	7320 BEGAF	7320 B.JP.UA	7320 BW
100	215	47	216	208	4000	4000	8	7320 BM	7320 BEGAM	7320 B.MP.UA	7320 BM
100	215	47	216	208	4000	4000	7.17	7320 BT	7320 BEGAP	7320 B.TVP.UA	7320 BT
100	215	47	203	190	3600	3600	7.15	7320 BM	7320 BEGBY	7320 B.MP.UA	7320 BM
100	215	47	203	190	3600	3800	8	7320 BM	7320 BEM	7320 B.MP	7320 BM
100	215	47	203	190	3600	3600	7.17	7320 BT	7320 BEP	7320 B.TVP	7320 BT
100	215	47	203	190	3600	3600	7.15	7320 BM	7320 BEY	7320 B.MP	7320 BM
100	265	60	276	275	3200	3200	15.5	7420 BM	7420 CBM	7420 B.MP	7420 BM
105	190	36	148	137	3800	4000	4.18	7221 BM	7221 BECBM	7221 B.MP.UA	7221 BM
105	190	36	156	150	4300	4300	3.82	7221 BT	7221 BECBP	7221 B.TVP.UA	7221 BT
105	190	36	148	137	3800	3800	3.82	7221 BT	7221 BEP	7221 B.TVP	7221 BT
105	225	49	203	193	3400	3600	9.12	7321 BM	7321 BECBM	7321 B.MP.UA	7321 BM
105	225	49	228	228	3800	3800	8.46	7321 BT	7321 BECBP	7321 B.TVP.UA	7321 BT
105	225	49	203	193	3400	3600	9.12	7321 BM	7321 BEGAM	7321 B.MP.UA	7321 BM
105	225	49	212	208	3400	3400	8.46	7321 BT	7321 BEP	7321 B.TVP	7321 BT
110	200	38	153	143	3600	3800	4.95	7222 BM	7222 BECBM	7222 B.MP.UA	7222 BM
110	200	38	170	166	4000	4000	4.6	7222 BT	7222 BECBP	7222 B.TVP.UA	7222 BT
110	200	38	163	153	3600	3600	4.75	7222 BW	7222 BECBY	7222 B.JP.UA	7222 BW
110	200	38	153	143	3600	3800	4.95	7222 BM	7222 BECCM	7222 B.MP.UA	7222 BM
110	200	38	153	143	3600	3600	4.95	7222 BW	7222 BEGAF	7222 B.JP.UA	7222 BW
110	200	38	153	143	3600	3600	4.95	7222 BW	7222 BEGBF	7222 B.JP.UA	7222 BW
110	200	38	153	143	3600	3800	4.95	7222 BM	7222 BEM	7222 B.MP	7222 BM
110	200	38	163	153	3600	3600	4.6	7222 BT	7222 BEP	7222 B.TVP	7222 BT
110	240	50	225	224	3200	3400	10.7	7322 BM	7322 BECBM	7322 B.MP.UA	7322 BM
110	240	50	240	245	3600	3600	9.69	7322 BT	7322 BECBP	7322 B.TVP.UA	7322 BT
110	240	50	225	224	3200	3200	9.69	7322 BW	7322 BECBY	7322 B.JP.UA	7322 BW
110	240	50	225	224	3200	3400	10.7	7322 BM	7322 BECCM	7322 B.MP.UA	7322 BM
110	240	50	225	224	3200	3400	10.7	7322 BM	7322 BEGAM	7322 B.MP.UA	7322 BM
110	240	50	225	224	3200	3400	10.7	7322 BM	7322 BEGBM	7322 B.MP.UA	7322 BM
110	240	50	225	224	3200	3400	10.7	7322 BM	7322 BEM	7322 B.MP	7322 BM
110	240	50	225	224	3200	3200	9.69	7322 BT	7322 BEP	7322 B.TVP	7322 BT
110	240	50	225	224	3200	3200	9.69	7322 BM	7322 BEY	7322 B.MP	7322 BM
120	180	28	87.1	93	3800	4000	2.4	7024 BM	7024 BGM	7024 B.MP	7024 BM
120	215	40	165	163	3400	3600	5.89	7224 BM	7224 BECBM	7224 B.MP.UA	7224 BM
120	215	40	165	163	3400	3600	5.89	7224 BM	7224 BEGAM	7224 B.MP	7224 BM
120	215	40	165	163	3400	3600	5.89	7224 BM	7224 BM	7224 B.MP	7224 BM

ANGULAR CONTACT BALL BEARINGS Single Row

Table 28
Bore Diameter 120mm - 400mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
120	260	55	238	250	3000	3200	13.8	7324 BM	7324 BCBM	7324 B.MP.UA	7324 BM
120	260	55	238	250	3000	3200	13.8	7324 BM	7324 BGBM	7324 B.MP	7324 BM
130	230	40	186	193	3200	3400	6.76	7226 BM	7226 BCBM	7226 B.MP.UA	7226 BM
130	230	40	186	193	3200	3400	6.76	7226 BM	7226 BGAM	7226 B.MP	7226 BM
130	230	40	186	193	3200	3400	6.76	7226 BM		7226 B.MP	7226 BM
130	280	58	276	305	2800	2800	17.1	7326 BM	7326 BCBM	7326 B.MP.UA	7326 BM
130	280	58	296	305	2800	2800	17.1	7326 BM	7326 BM	7326 B.MP	7326 BM
140	210	33	111	125	3200	3400	3.85	7028 BM	7028 BGM	7028 B.MP	7028 BM
140	250	42	199	212	2800	3000	8.83	7228 BM	7228 BCBM	7228 B.MP.UA	7228 BM
140	250	42	199	212	2800	3000	8.83	7228 BM	7228 BM	7228 B.MP	7228 BM
140	300	62	302	345	2600	2600	21.3	7328 BM	7328 BCBM	7328 B.MP.UA	7328 BM
150	225	35	119	132	3000	3200	4.7	7030 BM	7030 BGM	7030 B.MP	7030 BM
150	270	45	216	240	2600	2800	10.8	7230 BM	7230 BCBM	7230 B.MP.UA	7230 BM
150	270	45	216	240	2600	2800	10.8	7230 BM	7230 BGAM	7230 B.MP	7230 BM
150	320	65	332	390	2400	2400	25	7330 BM	7330 BCBM	7330 B.MP.UA	7330 BM
160	290	48	255	300	2400	2600	13.6	7232 BM	7232 BCBM	7232 B.MP.UA	7232 BM
160	340	68	358	440	2200	2400	30.3	7332 BM	7332 BCBM	7332 B.MP.UA	7332 BM
170	310	52	281	345	2400	2400	16.7	7234 BM	7234 BCBM	7234 B.MP.UA	7234 BM
170	360	72	390	490	2000	2200	34.6	7334 BM	7334 BCBM	7334 B.MP.UA	7334 BM
180	280	46	195	240	2400	2600	10	7036 BM	7036 BGM	7036 B.MP	7036 BM
180	320	52	291	375	2200	2400	17.6	7236 BM	7236 BCAM	7236 B.MP.UA	7236 BM
180	320	52	291	375	2200	2400	17.6	7236 BM	7236 BCBM	7236 B.MP.UA	7236 BM
180	380	75	410	540	2000	2000	40	7336 BM	7336 BCBM	7336 B.MP.UA	7336 BM
190	340	55	307	405	2000	2200	21.9	7238 BM	7238 BCBM	7238 B.MP.UA	7238 BM
190	400	78	442	600	1900	1900	48.3	7338 BM	7338 BCBM	7338 B.MP.UA	7338 BM
200	360	58	325	430	1800	2000	25	7240 BM	7240 BCBM	7240 B.MP.UA	7240 BM
200	420	80	462	655	1800	1800	52.8	7340 BM	7340 BCBM	7340 B.MP.UA	7340 BM
220	340	56	255	345	2000	2000	18	7044 BM	7044 BGM	7044 B.MP	7044 BM
220	400	65	390	560	1800	1800	35.2	7244 BM	7244 BCBM	7244 B.MP.UA	7244 BM
220	460	88	494	720	1600	1700	70	7344 BM	7344 BCBM	7344 B.MP.UA	7344 BM
240	360	56	260	375	1800	1900	19	7048 BM	7048 BGM	7048 B.MP	7048 BM
240	440	72	364	540	1600	1700	49	7248 BM	7248 BCBM	7248 B.MP.UA	7248 BM
240	500	95	559	865	1400	1500	88.5	7348 BM	7348 BCBM	7348 B.MP.UA	7348 BM
260	480	80	507	780	1400	1500	66	7252 BM	7252 BM	7252 B.MP	7252 BM
280	420	65	319	500	1500	1600	30	7056 BM	7056 BGM	7056 B.MP	7056 BM
280	500	80	520	850	1400	1400	69.5	7256 BM	7256 BM	7256 B.MP	7256 BM
300	460	74	377	630	1300	1500	42.5	7060 BM	7060 BGM	7060 B.MP	7060 BM
320	440	56	351	585	1500	1600	25.5	71964 A5	71964 AC	71964 E	71964 A5
320	480	74	390	670	1300	1400	44.5	7064 BM	7064 BGM	7064 B.MP	7064 BM
340	520	82	449	815	1200	1300	61.5	7068 BM	7068 BGM	7068 B.MP	7068 BM
340	620	92	702	1340	1100	1100	125	7268 BM	7268 BGM	7268 B.MP	7268 BM
360	480	56	338	610	1400	1500	28.5	71972 AM	71972 AMB	71972 A.MP	71972 AM
360	480	56	302	550	1400	1500	28.5	71972 BM	71972 BM	71972 B.MP	71972 BM
360	540	82	520	950	1300	1300	62.5	7072 AM	7072 AM	7072 AMP	7072 AM
360	650	95	650	1250	1000	1100	145	7272 BM	7272 BM	7272 B.MP	7272 BM
380	480	31	190	345	1300	1400	13.5	70876 AM	70876 AMB	70876 A.MP	70876 AM
380	560	82	507	950	1200	1300	65.5	7076 AM	7076 AM	7076 AMP	7076 AM
380	560	82	468	880	1100	1200	65.5	7076 BM	7076 BM	7076 B.MP	7076 BM
400	540	65	423	780	1200	1300	42	71980 AM	71980 AM	71980 AMP	71980 AM
400	600	90	605	1180	950	1200	90.5	7080 AM	7080 AM	7080 AMP	7080 AM



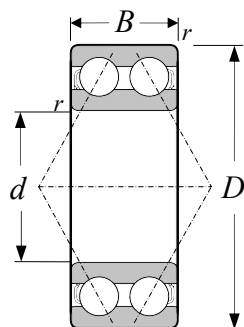
ANGULAR CONTACT BALL BEARINGS Single Row

Table 29
Bore Diameter 400mm - 1250mm

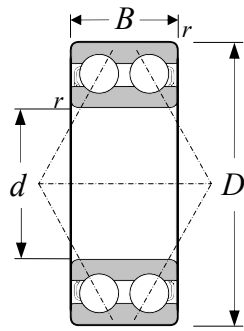
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	C	C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
400	600	90	527	1020	1000	1100	90.5	7080 BM	7080 BM	7080 B.MP	7080 BM
400	720	103	728	1500	900	950	190	7280 BM	7280 BM	7280 B.MP	7280 BM
420	560	65	423	800	1200	1200	44.5	71984 AM	71984 AM	71984 AMP	71984 AM
420	560	65	364	670	1200	1200	44.5	71984 BM	71984 BM	71984 B.MP	71984 BM
420	620	90	605	1180	1100	1100	95	7084 AM	7084 AM	7084 AMP	7084 AM
420	620	90	540	1060	1000	1000	95	7084 BM	7084 BGM	7084 B.MP	7084 BM
440	650	94	650	1320	1000	1100	100	7088 AM	7088 AM	7088 AMP	7088 AM
440	650	94	572	1180	950	950	100	7088 BM	7088 BM	7088 B.MP	7088 BM
460	580	37	265	560	1100	1100	24.5	70892 AM	70892 AM	70892 AMP	70892 AM
460	680	100	689	1460	950	1000	120	7092 AM	7092 AM	7092 AMP	7092 AM
460	680	100	618	1290	900	900	120	7092 BM	7092 BM	7092 B.MP	7092 BM
480	700	100	702	1530	950	1000	125	7096 AM	7096 AM	7096 AMP	7096 AM
480	700	100	624	1340	850	900	125	7096 BM	7096 BM	7096 B.MP	7096 BM
500	620	37	276	620	1000	1000	27	708/500 AM	708/500 AMB	708/500 A.MP	708/500 AM
500	620	56	390	850	1000	1000	38	718/500 AM	718/500 AMB	718/500 A.MP	718/500 AM
500	720	100	715	1600	900	950	130	70/500 AM	70/500 AM	70/500 AMP	70/500 AM
500	720	100	637	1400	800	850	130	70/500 BM	70/500 BM	70/500 B.MP	70/500 BM
530	650	56	390	900	950	1000	39.5	718/530 AM	718/530 AMB	718/530 A.MP	718/530 AM
530	780	112	832	1900	800	850	175	70/530 AM	70/530 AM	70/530 AMP	70/530 AM
530	780	112	741	1700	750	800	180	70/530 BM	70/530 BM	70/530 B.MP	70/530 BM
560	680	56	397	930	850	900	41.5	718/560 AM	718/560 AMB	718/560 A.MP	718/560 AM
560	750	85	592	1290	800	850	105	719/560 AM	719/560 AMB	719/560 A.MP	719/560 AM
560	820	115	904	2160	750	800	195	70/560 AM	70/560 AMB	70/560 A.MP	70/560 AM
600	730	42	338	735	800	850	38.5	708/600 AM	708/600 AMB	708/600 A.MP	708/600 AM
600	730	60	449	1100	800	850	47	718/600 AM	718/600 AMB	718/600 A.MP	718/600 AM
630	920	128	956	2450	560	700	270	70/630 AM	70/630 AMB	70/630 A.MP	70/630 AM
670	820	69	527	1250	700	750	77	718/670 AM	718/670 AMB	718/670 A.MP	718/670 AM
670	980	136	1170	3100	560	600	340	70/670 AM	70/670 AMB	70/670 A.MP	70/670 AM
710	870	74	572	1560	630	670	93.5	718/710 AM	718/710 AMB	718/710 A.MP	718/710 AM
710	1030	140	1190	3250	560	600	370	70/710 AM	70/710 AMB	70/710 A.MP	70/710 AM
750	1090	150	1300	3650	530	560	445	70/750 AM	70/750 AMB	70/750 A.MP	70/750 AM
800	1150	155	1330	3800	480	500	500	70/800 AM	70/800 AMB	70/800 A.MP	70/800 AM
850	1030	82	689	1860	500	530	140	718/850 AM	718/850 AMB	718/850 A.MP	718/850 AM
850	1220	165	1530	4650	450	480	595	70/850 AM	70/850 AMB	70/850 A.MP	70/850 AM
900	1280	170	1560	4900	400	430	665	70/900 AM	70/900 AMB	70/900 A.MP	70/900 AM
950	1360	180	1630	5200	380	400	805	70/950 AM	70/950 AMB	70/950 A.MP	70/950 AM
1000	1220	100	923	2750	400	430	245	718/1000 AM	718/1000 AMB	718/1000 A.MP	718/1000 AM
1000	1420	185	1630	5400	360	380	890	70/1000 AM	70/1000 AMB	70/1000 A.MP	70/1000 AM
1060	1500	195	1680	5700	320	340	1050	70/1060 AM	70/1060 AMB	70/1060 A.MP	70/1060 AM
1120	1360	106	1060	3750	340	360	320	718/1120 AM	718/1120 AMB	718/1120 A.MP	718/1120 AM
1120	1580	200	1720	5850	300	320	1150	70/1120 AM	70/1120 AMB	70/1120 A.MP	70/1120 AM
1180	1660	212	1740	6200	280	280	1350	70/1180 AM	70/1180 AMB	70/1180 A.MP	70/1180 AM
1250	1500	80	806	2700	280	300	295	708/1250 AM	708/1250 AMB	708/1250 A.MP	708/1250 AM
1250	1500	112	1140	3900	280	300	390	718/1250 AM	718/1250 AMB	718/1250 A.MP	718/1250 AM
1250	1750	218	1780	6550	240	260	1600	70/1250 AM	70/1250 AMB	70/1250 A.MP	70/1250 AM

ANGULAR CONTACT BALL BEARINGS Double Row

Table 30
Bore Diameter 10mm - 25mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min						
10	30	14	7.61	4.3	-	17000	0.051	3200 2RSTNG	3200 A-2RS1TN9/MT33	3200 19RSR.TVH	3200 2RSTNG
10	30	14	7.61	4.3	22000	24000	0.051	3200 2ZTN	3200 A-2ZTN9/MT33	3200	3200 2ZTN
10	30	14	7.61	4.3	22000	24000	0.051	3200 BTNG	3200 ATN9	3200 TVH	3200 BTNG
10	30	14.3	7.61	4.3	-	17000	0.051	5200 2RSTNG	5200 A-2RS1TN9	5200 2RSR.TVH	5200 2RSTNG
10	30	14.3	7.61	4.3	22000	24000	0.051	5200 2ZTN	5200 A-2ZTN9	5200	5200 2ZTN
10	30	14.3	7.61	4.3	22000	24000	0.051	5200 BTNG	5200 ATN9	5200 TVH	5200 BTNG
12	32	15.9	10.1	5.6	-	15000	0.058	3201 2RSTNG	3201 A-2RS1TN9/MT33	3201 20RSR.TVH	3201 2RSTNG
12	32	15.9	10.1	5.6	20000	22000	0.058	3201 2ZTN	3201 A-2ZTN9/MT33	3201	3201 2ZTN
12	32	15.9	10.1	5.6	20000	22000	0.058	3201 BTNG	3201 ATN9	3201 TVH	3201 BTNG
12	32	15.9	10.1	5.6	-	15000	0.058	5201 2RSTNG	5201 A-2RS1TN9	5201 3RSR.TVH	5201 2RSTNG
12	32	15.9	10.1	5.6	20000	22000	0.058	5201 2ZTN	5201 A-2ZTN9	5201	5201 2ZTN
12	32	15.9	10.1	5.6	20000	22000	0.058	5201 BTNG	5201 ATN9	5201 TVH	5201 BTNG
15	35	15.9	11.2	6.8	-	14000	0.066	3202 2RSTNG	3202 A-2RS1TN9/MT33	3202 21RSR.TVH	3202 2RSTNG
15	35	15.9	11.2	6.8	17000	18000	0.066	3202 2ZTN	3202 A-2ZTN9/MT33	3202	3202 2ZTN
15	35	15.9	11.2	6.8	17000	18000	0.066	3202 BTNG	3202 ATN9	3202 TVH	3202 BTNG
15	35	15.9	11.2	6.8	-	14000	0.066	5202 2RSTNG	5202 A-2RS1TN9	5202 4RSR.TVH	5202 2RSTNG
15	35	15.9	11.2	6.8	17000	18000	0.066	5202 2ZTN	5202 A-2ZTN9	5202	5202 2ZTN
15	35	15.9	11.2	6.8	17000	18000	0.066	5202 BTNG	5202 ATN9	5202 TVH	5202 BTNG
15	42	19	15.1	9.3	-	12000	0.13	3302 2RSTNG	3302 A-2RS1TN9/MT33	3302 22RSR.TVH	3302 2RSTNG
15	42	19	15.1	9.3	15000	16000	0.13	3302 2ZTN	3302 A-2ZTN9/MT33	3302	3302 2ZTN
15	42	19	15.1	9.3	15000	16000	0.13	3302 BTNG	3302 ATN9	3302 TVH	3302 BTNG
17	40	17.5	14.3	8.8	-	12000	0.096	3203 2RSTNG	3203 A-2RS1TN9/MT33	3203 23RSR.TVH	3203 2RSTNG
17	40	17.5	14.3	8.8	15000	16000	0.1	3203 2ZTN	3203 A-2ZTN9/MT33	3203	3203 2ZTN
17	40	17.5	14.3	8.8	15000	16000	0.095	3203 BTNG	3203 ATN9	3203 TVH	3203 BTNG
17	40	17.5	14.3	8.8	-	12000	0.096	5203 2RSTNG	5203 A-2RS1TN9	5203 5RSR.TVH	5203 2RSTNG
17	40	17.5	14.3	8.8	15000	16000	0.1	5203 2ZTN	5203 A-2ZTN9	5203	5203 2ZTN
17	40	17.5	14.3	8.8	15000	16000	0.095	5203 BTNG	5203 ATN9	5203 TVH	5203 BTNG
17	47	22.2	21.6	12.7	-	11000	0.18	3303 2RSTNG	3303 A-2RS1TN9/MT33	3303 24RSR.TVH	3303 2RSTNG
17	47	22.2	21.6	12.7	14000	14000	0.18	3303 2ZTN	3303 A-2ZTN9/MT33	3303	3303 2ZTN
17	47	22.2	21.6	12.7	14000	14000	0.18	3303 BTNG	3303 ATN9	3303 TVH	3303 BTNG
20	47	20.6	20	12	14000	14000	0.16	3204	3204 A	3204 A	3204
20	47	20.6	20	12	-	10000	0.14	3204 2RS	3204 A-2RS1/MT33	3204 2RS	3204 2RS
20	47	20.6	20	12	-	10000	0.16	3204 2RSTNG	3204 A-2RS1TN9/MT33	3204 6RSR.TVH	3204 2RSTNG
20	47	20.6	20	12	14000	14000	0.15	3204 2Z	3204 A-2Z/MT33	3204	3204 2Z
20	47	20.6	20	12	14000	14000	0.16	3204 2ZTN	3204 A-2ZTN9/MT33	3204	3204 2ZTN
20	47	20.6	20	12	14000	14000	0.15	3204 BTNG	3204 ATN9	3204 TVH	3204 BTNG
20	47	20.6	20	12	14000	14000	0.16	5204	5204 A	5204 A	5204
20	47	20.6	20	12	-	10000	0.14	5204 2RS	5204 A-2RS1	5204	5204 2RS
20	47	20.6	20	12	14000	14000	0.15	5204 2Z	5204 A-2Z	5204	5204 2Z
20	52	22.2	23.6	14.6	13000	13000	0.2	3304 A	3304 A	3304 A	3304
20	52	22.2	23.6	14.6	-	9000	0.21	3304 2RS	3304 A-2RS1/MT33	3304 2RS	3304 2RS
20	52	22.2	23.6	14.6	-	9000	0.22	3304 2RSTNG	3304 A-2RS1TN9/MT33	3304 7RSR.TVH	3304 2RSTNG
20	52	22.2	23.6	14.6	13000	13000	0.21	3304 2Z	3304 A-2Z/MT33	3304	3304 2Z
20	52	22.2	23.6	14.6	13000	13000	0.22	3304 2ZTN	3304 A-2ZTN9/MT33	3304	3304 2ZTN
20	52	22.2	23.6	14.6	13000	13000	0.22	3304 BTNG	3304 ATN9	3304 TVH	3304 BTNG
20	52	22.2	23.6	14.6	13000	13000	0.2	5304	5304 A	5304 A	5304
20	52	22.2	23.6	14.6	-	9000	0.21	5304 2RS	5304 A-2RS1	5304	5304 2RS
20	52	22.2	23.6	14.6	13000	13000	0.21	5304 2Z	5304 A-2Z	5304	5304 2Z
25	52	20.6	21.6	14.3	12000	12000	0.19	3205	3205 A	3205 A	3205
25	52	20.6	21.6	14.3	-	8500	0.18	3205 2RS	3205 A-2RS1/MT33	3205 2RS	3205 2RS



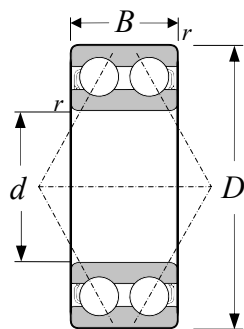
ANGULAR CONTACT BALL BEARINGS Double Row

Table 31
Bore Diameter 25mm - 35mm

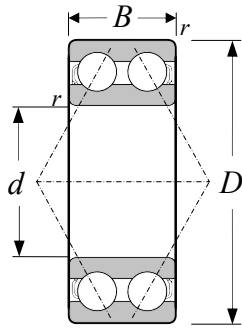
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min		kg				
25	52	20.6	21.6	14.3	-	8500	0.18	3205 2RSTNG	3205 A-2RS1TN9/MT33	3205 8RSR.TVH	3205 2RSTNG
25	52	20.6	21.6	14.3	12000	12000	0.18	3205 2Z	3205 A-2Z/MT33	3205	3205 2Z
25	52	20.6	21.6	14.3	12000	12000	0.18	3205 2ZTN	3205 A-2ZTN9/MT33	3205	3205 2ZTN
25	52	20.6	21.6	14.3	12000	12000	0.18	3205 BTNG	3205 ATN9	3205 TVH	3205 BTNG
25	52	20.6	21.6	14.3	12000	12000	0.19	5205	5205 A	5205 A	5205
25	52	20.6	21.6	14.3	-	8500	0.18	5205 2RS	5205 A-2RS1	5205	5205 2RS
25	52	20.6	21.6	14.3	12000	12000	0.18	5205 2Z	5205 A-2Z	5205	5205 2Z
25	52	20.6	22.9	21.2	11000	12000	0.25	5205	5205 E	5205	5205
25	52	20.6	22.9	21.2	-	8500	0.25	5205 2RS	5205 E-2RS1	5205 2RS	5205 2RS
25	52	20.6	22.9	21.2	11000	12000	0.25	5205 2Z	5205 E-2Z	5205 2Z	5205 2Z
25	62	25.4	32	20.4	11000	11000	0.31	3305	3305 A	3305 A	3305
25	62	25.4	32	20.4	-	7500	0.35	3305 2RSTNG	3305 A-2RS1TN9/MT33	3305 9RSR.TVH	3305 2RSTNG
25	62	25.4	32	20.4	11000	11000	0.35	3305 2Z	3305 A-2Z/MT33	3305	3305 2Z
25	62	25.4	32	20.4	11000	11000	0.36	3305 2ZTN	3305 A-2ZTN9/MT33	3305	3305 2ZTN
25	62	25.4	32	20.4	11000	11000	0.35	3305 BTNG	3305 ATN9	3305 TVH	3305 BTNG
25	62	25.4	32	20.4	11000	11000	0.31	5305	5305 A	5305 A	5305
25	62	25.4	32	20.4	-	7500	0.35	5305 2RS	5305 A-2RS1	5305	5305 2RS
25	62	25.4	32	20.4	11000	11000	0.35	5305 2Z	5305 A-2Z	5305	5305 2Z
25	62	25.4	34.1	30.5	10000	10000	0.39	5305	5305 E	5305	5305
25	62	25.4	34.1	30.5	-	7500	0.39	5305 2RS	5305 E-2RS1	5305 2RS	5305 2RS
25	62	25.4	34.1	30.5	10000	10000	0.39	5305 2Z	5305 E-2Z	5305 2Z	5305 2Z
30	62	23.8	30	20.4	10000	10000	0.29	3206	3206 A	3206 A	3206
30	62	23.8	30	20.4	-	7500	0.27	3206 2RS	3206 A-2RS1/MT33	3206 2RS	3206 2RS
30	62	23.8	30	20.4	-	7500	0.29	3206 2RSTNG	3206 A-2RS1TN9/MT33	3206 10RSR.TVH	3206 2RSTNG
30	62	23.8	30	20.4	10000	10000	0.27	3206 2Z	3206 A-2Z/MT33	3206	3206 2Z
30	62	23.8	30	20.4	10000	10000	0.29	3206 2ZTN	3206 A-2ZTN9/MT33	3206	3206 2ZTN
30	62	23.8	30	20.4	10000	10000	0.29	3206 BTNG	3206 ATN9	3206 TVH	3206 BTNG
30	62	23.8	30	20.4	10000	10000	0.29	5206	5206 A	5206 A	5206
30	62	23.8	30	20.4	-	7500	0.27	5206 2RS	5206 A-2RS1	5206	5206 2RS
30	62	23.8	30	20.4	10000	10000	0.27	5206 2Z	5206 A-2Z	5206	5206 2Z
30	62	23.8	30.3	28	9500	10000	0.35	5206	5206 E	5206	5206
30	62	23.8	30.3	28	-	7500	0.35	5206 2RS	5206 E-2RS1	5206 2RS	5206 2RS
30	62	23.8	30.3	28	9500	10000	0.35	5206 2Z	5206 E-2Z	5206 2Z	5206 2Z
30	72	30.2	41.5	27.5	9000	9000	0.59	3306	3306 A	3306 A	3306
30	72	30.2	41.5	27.5	-	6300	0.52	3306 2RSTNG	3306 A-2RS1TN9/MT33	3306 11RSR.TVH	3306 2RSTNG
30	72	30.2	41.5	27.5	9000	9000	0.52	3306 2Z	3306 A-2Z/MT33	3306	3306 2Z
30	72	30.2	41.5	27.5	9000	9000	0.52	3306 2ZTN	3306 A-2ZTN9/MT33	3306	3306 2ZTN
30	72	30.2	41.5	27.5	9000	9000	0.53	3306 BTNG	3306 ATN9	3306 TVH	3306 BTNG
30	72	30.2	41.5	27.5	9000	9000	0.59	5306	5306 A	5306 A	5306
30	72	30.2	41.5	27.5	-	6300	0.53	5306 2RS	5306 A-2RS1	5306	5306 2RS
30	72	30.2	41.5	27.5	9000	9000	0.52	5306 2Z	5306 A-2Z	5306	5306 2Z
30	72	30.2	46.8	43	8500	9000	0.59	5306	5306 E	5306	5306
30	72	30.2	46.8	43	-	6300	0.59	5306 2RS	5306 E-2RS1	5306 2RS	5306 2RS
30	72	30.2	46.8	43	8500	9000	0.59	5306 2Z	5306 E-2Z	5306 2Z	5306 2Z
35	72	27	40	28	9000	9000	0.4	3207	3207 A	3207 A	3207
35	72	27	40	28	-	6300	0.44	3207 2RS	3207 A-2RS1/MT33	3207 2RS	3207 2RS
35	72	27	40	28	-	6300	0.44	3207 2RSTNG	3207 A-2RS1TN9/MT33	3207 12RSR.TVH	3207 2RSTNG
35	72	27	40	28	9000	9000	0.44	3207 2Z	3207 A-2Z/MT33	3207	3207 2Z
35	72	27	40	28	9000	9000	0.44	3207 2ZTN	3207 A-2ZTN9/MT33	3207	3207 2ZTN
35	72	27	40	28	9000	9000	0.44	3207 BTNG	3207 ATN9	3207 TVH	3207 BTNG

ANGULAR CONTACT BALL BEARINGS Double Row

Table 32
Bore Diameter 35mm - 45mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min		kg				
35	72	27	40	28	9000	9000	0.4	5207	5207 A	5207 A	5207
35	72	27	40	28	-	6300	0.44	5207 2RS	5207 A-2RS1	5207	5207 2RS
35	72	27	40	28	9000	9000	0.44	5207 2Z	5207 A-2Z	5207	5207 2Z
35	72	27	39.1	36.5	8000	8500	0.54	5207	5207 E	5207	5207
35	72	27	39.1	36.5	-	6300	0.54	5207 2RS	5207 E-2RS1	5207 2RS	5207 2RS
35	72	27	39.1	36.5	8000	8500	0.54	5207 2Z	5207 E-2Z	5207 2Z	5207 2Z
35	80	34.9	52	35.5	8500	8500	0.71	3307	3307 A	3307 A	3307
35	80	34.9	52	35.5	-	6000	0.73	3307 2RSTNG	3307 A-2RS1TN9/MT33	3307 13RSR.TVH	3307 2RSTNG
35	80	34.9	52	35.5	8500	8500	0.73	3307 2Z	3307 A-2Z/MT33	3307	3307 2Z
35	80	34.9	52	35.5	8500	8500	0.73	3307 2ZTN	3307 A-2ZTN9/MT33	3307	3307 2ZTN
35	80	34.9	52	35.5	8500	8500	0.71	3307 BTNG	3307 ATN9	3307 TVH	3307 BTNG
35	80	34.9	52.7	41.5	7500	8000	0.79	3307	3307 DJ1	3307	3307
35	80	34.9	52	35.5	8500	8500	0.71	5307	5307 A	5307 A	5307
35	80	34.9	52	35.5	-	6000	0.73	5307 2RS	5307 A-2RS1	5307	5307 2RS
35	80	34.9	52	35.5	8500	8500	0.73	5307 2Z	5307 A-2Z	5307	5307 2Z
35	80	34.9	52.3	48	7500	8000	0.86	5307	5307 E	5307	5307
35	80	34.9	52.3	48	-	6000	0.86	5307 2RS	5307 E-2RS1	5307 2RS	5307 2RS
35	80	34.9	52.3	48	7500	8000	0.86	5307 2Z	5307 E-2Z	5307 2Z	5307 2Z
40	80	30.2	47.5	34	8000	8000	0.58	3208	3208 A	3208 A	3208
40	80	30.2	47.5	34	-	5600	0.57	3208 2RS	3208 A-2RS1/MT33	3208 2RS	3208 2RS
40	80	30.2	47.5	34	-	5600	0.57	3208 2RSTNG	3208 A-2RS1TN9/MT33	3208 14RSR.TVH	3208 2RSTNG
40	80	30.2	47.5	34	8000	8000	0.57	3208 2Z	3208 A-2Z/MT33	3208	3208 2Z
40	80	30.2	47.5	34	8000	8000	0.57	3208 2ZTN	3208 A-2ZTN9/MT33	3208	3208 2ZTN
40	80	30.2	47.5	34	8000	8000	0.58	3208 BTNG	3208 ATN9	3208 TVH	3208 BTNG
40	80	30.2	47.5	34	8000	8000	0.58	5208	5208 A	5208 A	5208
40	80	30.2	47.5	34	-	5600	0.57	5208 2RS	5208 A-2RS1	5208	5208 2RS
40	80	30.2	47.5	34	8000	8000	0.57	5208 2Z	5208 A-2Z	5208	5208 2Z
40	80	30.2	49.5	49	7500	8000	0.73	5208	5208 E	5208	5208
40	80	30.2	49.5	49	-	5600	0.73	5208 2RS	5208 E-2RS1	5208 2RS	5208 2RS
40	80	30.2	49.5	49	7500	8000	0.73	5208 2Z	5208 E-2Z	5208 2Z	5208 2Z
40	90	36.5	64	44	7500	7500	1.05	3308	3308 A	3308 A	3308
40	90	36.5	64	44	-	5000	0.93	3308 2RSTNG	3308 A-2RS1TN9/MT33	3308 15RSR.TVH	3308 2RSTNG
40	90	36.5	64	44	7500	7500	0.93	3308 2Z	3308 A-2Z/MT33	3308	3308 2Z
40	90	36.5	64	44	7500	7500	0.93	3308 2ZTN	3308 A-2ZTN9/MT33	3308	3308 2ZTN
40	90	36.5	64	44	7500	7500	1.05	3308 BTNG	3308 ATN9	3308 TVH	3308 BTNG
40	90	36.5	68.9	64	6700	7000	1.15	3308 M	3308 DMA	3308 M	3308 M
40	90	36.5	49.4	41.5	6700	7000	1.2	3308	3308 DNRCBM	3308	3308
40	90	36.5	68.9	64	6700	7000	1.05	3308	3308 DTN9	3308	3308
40	90	36.5	64	44	7500	7500	1.05	5308	5308 A	5308 A	5308
40	90	36.5	64	44	-	5000	0.93	5308 2RS	5308 A-2RS1	5308	5308 2RS
40	90	36.5	64	44	7500	7500	0.93	5308 2Z	5308 A-2Z	5308	5308 2Z
40	90	36.5	67.1	65.5	6700	7000	1.15	5308	5308 E	5308	5308
40	90	36.5	67.1	65.5	-	5000	1.15	5308 2RS	5308 E-2RS1	5308 2RS	5308 2RS
40	90	36.5	67.1	65.5	6700	7000	1.15	5308 2Z	5308 E-2Z	5308 2Z	5308 2Z
40	110	49.2	88.4	60	5600	6000	2.3	5408	5408 A	5408 A	5408
45	85	30.2	51	39	7500	7500	0.64	3209	3209 A	3209 A	3209
45	85	30.2	51	39	-	5300	0.63	3209 2RS	3209 A-2RS1/MT33	3209 2RS	3209 2RS
45	85	30.2	51	39	-	5300	0.63	3209 2RSTNG	3209 A-2RS1TN9/MT33	3209 16RSR.TVH	3209 2RSTNG
45	85	30.2	51	39	7500	7500	0.63	3209 2Z	3209 A-2Z/MT33	3209	3209 2Z
45	85	30.2	51	39	7500	7500	0.63	3209 2ZTN	3209 A-2ZTN9/MT33	3209	3209 2ZTN



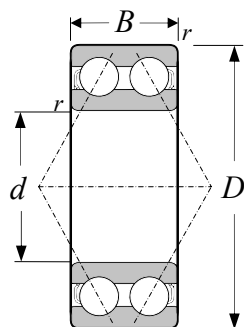
ANGULAR CONTACT BALL BEARINGS Double Row

Table 33
Bore Diameter 45mm - 55mm

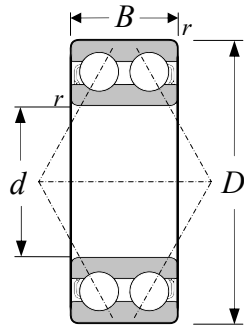
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min		kg				
45	85	30.2	51	39	7500	7500	0.63	3209 BTNG	3209 ATN9	3209 TVH	3209 BTNG
45	85	30.2	51	39	7500	7500	0.64	5209	5209 A	5209 A	5209
45	85	30.2	51	39	-	5300	0.63	5209 2RS	5209 A-2RS1	5209	5209 2RS
45	85	30.2	51	39	7500	7500	0.63	5209 2Z	5209 A-2Z	5209	5209 2Z
45	85	30.2	51.2	54	6700	7000	0.77	5209	5209 E	5209	5209
45	100	39.7	75	53	6700	6700	1.4	3309	3309 A	3309 A	3309
45	100	39.7	75	53	-	4800	1.4	3309 2RS	3309 A-2RS1/MT33	3309 2RS	3309 2RS
45	100	39.7	75	53	6700	6700	1.4	3309 2Z	3309 A-2Z/MT33	3309	3309 2Z
45	100	39.7	75	53	6700	6700	1.4	3309 BTNG	3309 ATN9	3309 TVH	3309 BTNG
45	100	39.7	79.3	69.5	6000	6300	1.6	3309 M	3309 DMA	3309 M	3309 M
45	100	39.7	61.8	52	6000	6300	1.5	3309	3309 DNRCBM	3309	3309
45	100	39.7	75	53	-	4800	1.4	5309 2RS	5309 A-2RS1	5309	5309 2RS
45	100	39.7	75	53	6700	6700	1.4	5309 2Z	5309 A-2Z	5309	5309 2Z
45	100	39.7	80.9	80	6000	6300	1.5	5309	5309 E	5309	5309
45	100	39.7	80.9	80	-	4800	1.5	5309 2RS	5309 E-2RS1	5309 2RS	5309 2RS
45	100	39.7	80.9	80	6000	6300	1.5	5309 2Z	5309 E-2Z	5309 2Z	5309 2Z
45	120	54	112	82	5300	5600	3	5409	5409 A	5409 A	5409
50	90	30.2	51	39	7000	7000	0.66	3210	3210 A	3210 A	3210
50	90	30.2	51	39	-	4800	0.65	3210 2RS	3210 A-2RS1/MT33	3210 2RS	3210 2RS
50	90	30.2	51	39	-	4800	0.65	3210 2RSTNG	3210 A-2RS1TN9/MT33	3210 17RSR.TVH	3210 2RSTNG
50	90	30.2	51	39	7000	7000	0.65	3210 2Z	3210 A-2Z/MT33	3210	3210 2Z
50	90	30.2	51	39	7000	7000	0.65	3210 2ZTN	3210 A-2ZTN9/MT33	3210	3210 2ZTN
50	90	30.2	51	39	7000	7000	0.66	3210 BTNG	3210 ATN9	3210 TVH	3210 BTNG
50	90	30.2	51	39	7000	7000	0.66	5210	5210 A	5210 A	5210
50	90	30.2	51	39	-	4800	0.65	5210 2RS	5210 A-2RS1	5210	5210 2RS
50	90	30.2	51	39	7000	7000	0.65	5210 2Z	5210 A-2Z	5210	5210 2Z
50	90	30.2	53.9	58.5	6300	6700	0.82	5210	5210 E	5210	5210
50	90	30.2	53.9	58.5	-	4800	0.82	5210 2RS	5210 E-2RS1	5210 2RS	5210 2RS
50	90	30.2	53.9	58.5	6300	6700	0.82	5210 2Z	5210 E-2Z	5210 2Z	5210 2Z
50	110	44.4	90	64	6000	6000	1.95	3310	3310 A	3310 A	3310
50	110	44.4	90	64	-	4300	1.95	3310 2RS	3310 A-2RS1/MT33	3310 2RS	3310 2RS
50	110	44.4	90	64	6000	6000	1.95	3310 2Z	3310 A-2Z/MT33	3310	3310 2Z
50	110	44.4	90	64	6000	6000	1.95	3310 BTNG	3310 ATN9	3310 TVH	3310 BTNG
50	110	44.4	93.6	85	5300	5600	2.15	3310 M	3310 DMA	3310 M	3310 M
50	110	44.4	81.9	69.5	5300	5600	1.95	3310	3310 DNRCBM	3310	3310
50	110	44.4	90	64	-	4300	1.95	5310 2RS	5310 A-2RS1	5310	5310 2RS
50	110	44.4	90	64	6000	6000	1.95	5310 2Z	5310 A-2Z	5310	5310 2Z
50	110	44.4	95.2	95	5300	5600	2	5310	5310 E	5310	5310
50	110	44.4	95.2	95	-	4300	2	5310 2RS	5310 E-2RS1	5310 2RS	5310 2RS
50	110	44.4	95.2	95	5300	5600	2	5310 2Z	5310 E-2Z	5310 2Z	5310 2Z
50	130	58.7	143	104	4800	5000	3.7	5410	5410 A	5410 A	5410
55	100	33.3	60	47.5	6300	6300	1.05	3211	3211 A	3211 A	3211
55	100	33.3	60	47.5	-	4500	1.05	3211 2RS	3211 A-2RS1/MT33	3211 2RS	3211 2RS
55	100	33.3	60	47.5	6300	6300	1.05	3211 2Z	3211 A-2Z/MT33	3211	3211 2Z
55	100	33.3	60	47.5	6300	6300	1.05	3211 BTNG	3211 ATN9	3211 TVH	3211 BTNG
55	100	33.3	60	47.5	6300	6300	1.05	5211	5211 A	5211 A	5211
55	100	33.3	60	47.5	-	4500	1.05	5211 2RS	5211 A-2RS1	5211	5211 2RS
55	100	33.3	60	47.5	6300	6300	1.05	5211 2Z	5211 A-2Z	5211	5211 2Z
55	100	33.3	66	76.5	5600	6000	1.15	5211	5211 E	5211	5211
55	100	33.3	66	76.5	-	4300	1.15	5211 2RS	5211 E-2RS1	5211 2RS	5211 2RS

ANGULAR CONTACT BALL BEARINGS Double Row

Table 34
Bore Diameter 55mm - 70mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min		kg				
55	100	33.3	66	76.5	5600	6000	1.15	5211 2Z	5211 E-2Z	5211 2Z	5211 2Z
55	120	49.2	112	81.5	5300	5300	2.55	3311	3311 A	3311 A	3311
55	120	49.2	112	81.5	-	3800	2.55	3311 2RS	3311 A-2RS1/MT33	3311 2RS	3311 2RS
55	120	49.2	112	81.5	5300	5300	2.55	3311 2Z	3311 A-2Z/MT33	3311	3311 2Z
55	120	49.2	112	81.5	5300	5300	2.55	3311 BTNG	3311 ATN9	3311 TVH	3311 BTNG
55	120	49.2	111	100	4800	5000	2.8	3311 M	3311 DMA	3311 M	3311 M
55	120	49.2	95.6	83	4800	5000	2.55	3311	3311 DNRCBM	3311	3311
55	120	49.2	111	100	4800	5000	2.8	3311	3311 DTN9	3311	3311
55	120	49.2	112	81.5	5300	5300	2.55	5311 2Z	5311 A-2Z	5311	5311 2Z
55	120	49.2	119	122	5000	5300	2.65	5311 E	5311 E	5311	5311
55	120	49.2	119	122	5000	5300	2.65	5311 2Z	5311 E-2Z	5311 2Z	5311 2Z
55	140	63.5	146	108	4300	4500	4.7	5411	5411 A	5411 A	5411
60	110	36.5	73.5	58.5	5600	5600	1.4	3212	3212 A	3212 A	3212
60	110	36.5	73.5	58.5	-	4000	1.4	3212 2RS	3212 A-2RS1/MT33	3212 2RS	3212 2RS
60	110	36.5	73.5	58.5	-	4000	1.4	3212 2RSTNG	3212 A-2RS1TN9/MT33	3212 18RSR.TVH	3212 2RSTNG
60	110	36.5	73.5	58.5	5600	5600	1.4	3212 2Z	3212 A-2Z/MT33	3212	3212 2Z
60	110	36.5	73.5	58.5	5600	5600	1.4	3212 BTNG	3212 ATN9	3212 TVH	3212 BTNG
60	110	36.5	73.5	58.5	5600	5600	1.4	5212	5212 A	5212 A	5212
60	110	36.5	73.5	58.5	-	4000	1.4	5212 2RS	5212 A-2RS1	5212	5212 2RS
60	110	36.5	73.5	58.5	5600	5600	1.4	5212 2Z	5212 A-2Z	5212	5212 2Z
60	110	36.5	78.1	88	5000	5300	1.5	5212	5212 E	5212	5212
60	110	36.5	78.1	88	-	4000	1.5	5212 2RS	5212 E-2RS1	5212 2RS	5212 2RS
60	110	36.5	78.1	88	5000	5300	1.5	5212 2Z	5212 E-2Z	5212 2Z	5212 2Z
60	130	54	127	95	5000	5000	3.25	3312	3312 A	3312 A	3312
60	130	54	127	95	5000	5000	3.25	3312 2Z	3312 A-2Z/MT33	3312	3312 2Z
60	130	54	127	95	5000	5000	3.25	5312	5312 A	5312 A	5312
60	130	54	127	95	5000	5000	3.25	5312 2Z	5312 A-2Z	5312	5312 2Z
60	130	54	134	143	4500	4800	3.3	5312	5312 E	5312	5312
60	130	54	134	143	4500	4800	3.3	5312 2Z	5312 E-2Z	5312 2Z	5312 2Z
60	150	66.7	159	122	4000	4300	5.7	5412	5412 A	5412 A	5412
65	120	38.1	80.6	73.5	4500	4800	1.75	3213	3213 A	3213 A	3213
65	120	38.1	80.6	73.5	-	3600	1.75	3213 2RS	3213 A-2RS1/MT33	3213 2RS	3213 2RS
65	120	38.1	80.6	73.5	4500	4800	1.75	3213 2Z	3213 A-2Z/MT33	3213	3213 2Z
65	120	38.1	80.6	73.5	4500	4800	1.75	5213	5213 A	5213 A	5213
65	120	38.1	80.6	73.5	-	3600	1.75	5213 2RS	5213 A-2RS1	5213	5213 2RS
65	120	38.1	80.6	73.5	4500	4800	1.75	5213 2Z	5213 A-2Z	5213	5213 2Z
65	120	38.1	88	106	4800	5000	1.95	5213	5213 E	5213	5213
65	120	38.1	88	106	4800	5000	1.95	5213 2Z	5213 E-2Z	5213 2Z	5213 2Z
65	140	58.7	146	110	4500	4500	4.1	3313	3313 A	3313 A	3313
65	140	58.7	146	110	4500	4500	4.1	3313 2Z	3313 A-2Z/MT33	3313	3313 2Z
65	140	58.7	138	122	4300	4500	4	3313	3313 DNRCBM	3313	3313
65	140	58.7	146	110	4500	4500	4.1	5313	5313 A	5313 A	5313
65	140	58.7	146	110	4500	4500	4.1	5313 2Z	5313 A-2Z	5313	5313 2Z
65	140	58.7	154	163	4300	4500	4.2	5313	5313 E	5313	5313
65	140	58.7	154	163	4300	4500	4.2	5313 2Z	5313 E-2Z	5313 2Z	5313 2Z
65	160	71.4	195	163	3800	4000	6.75	5413	5413 A	5413 A	5413
70	125	39.7	88.4	80	4300	4500	1.9	3214	3214 A	3214 A	3214
70	125	39.7	88.4	80	4300	4500	1.9	3214 2Z	3214 A-2Z/MT33	3214	3214 2Z
70	125	39.7	88.4	80	4300	4500	1.9	5214	5214 A	5214 A	5214
70	125	39.7	88.4	80	4300	4500	1.9	5214 2Z	5214 A-2Z	5214	5214 2Z



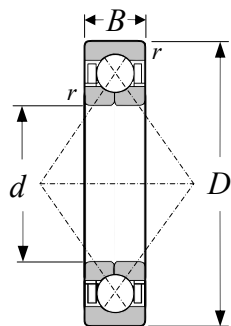
ANGULAR CONTACT BALL BEARINGS
Double Row

Table 35
Bore Diameter 70mm - 110mm

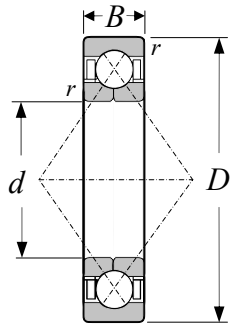
Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic	Static	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm			C	C ₀	r/min		kg				
70	125	39.7	101	125	4500	4800	2.15	5214	5214 E	5214	5214
70	125	39.7	101	125	4500	4800	2.15	5214 2Z	5214 E-2Z	5214 2Z	5214 2Z
70	150	63.5	163	125	4300	4300	5.05	3314	3314 A	3314 A	3314
70	150	63.5	163	125	4300	4300	5.05	3314 2Z	3314 A-2Z/MT33	3314	3314 2Z
70	150	63.5	163	125	4300	4300	5.05	5314	5314 A	5314 A	5314
70	150	63.5	163	125	4300	4300	5.05	5314 2Z	5314 A-2Z	5314	5314 2Z
70	150	63.5	172	186	4000	4300	5	5314	5314 E	5314	5314
70	180	79.4	199	170	3400	3600	9.9	5414	5414 A	5414 A	5414
75	130	41.3	95.6	88	4300	4500	2.1	3215	3215 A	3215 A	3215
75	130	41.3	95.6	88	4300	4500	2.1	3215 2Z	3215 A-2Z/MT33	3215	3215 2Z
75	130	41.3	95.6	88	4300	4500	2.1	5215	5215 A	5215 A	5215
75	130	41.3	95.6	88	-	3200	2.1	5215 2RS	5215 A-2RS1	5215	5215 2RS
75	130	41.3	95.6	88	4300	4500	2.1	5215 2Z	5215 A-2Z	5215	5215 2Z
75	130	41.3	108	137	4300	4500	2.5	5215	5215 E	5215	5215
75	130	41.3	108	137	4300	4500	2.5	5215 2Z	5215 E-2Z	5215 2Z	5215 2Z
75	160	68.3	176	140	4000	4000	5.55	3315	3315 A	3315 A	3315
75	160	68.3	176	140	4000	4000	5.6	3315 2Z	3315 A-2Z/MT33	3315	3315 2Z
75	160	68.3	176	140	4000	4000	5.6	5315 2Z	5315 A-2Z	5315	5315 2Z
75	160	68.3	187	208	3600	3800	6.35	5315	5315 E	5315	5315
80	140	44.4	106	95	4000	4300	2.65	3216	3216 A	3216 A	3216
80	140	44.4	106	95	4000	4300	2.65	5216	5216 A	5216 A	5216
80	140	44.4	106	95	-	3000	2.65	5216 2RS	5216 A-2RS1	5216	5216 2RS
80	140	44.4	128	160	4000	4000	3	5216	5216 E	5216	5216
80	140	44.4	128	160	4000	4000	3	5216 2Z	5216 E-2Z	5216 2Z	5216 2Z
80	170	68.3	182	156	3400	3600	6.8	3316	3316 A	3316 A	3316
80	170	68.3	190	196	3400	3600	7.55	3316 M	3316 DMA	3316 M	3316 M
80	170	68.3	182	156	3400	3600	6.8	5316	5316 A	5316 A	5316
80	170	68.3	201	236	3400	3600	7.25	5316	5316 E	5316	5316
85	150	49.2	124	110	3600	3800	3.4	3217	3217 A	3217 A	3217
85	150	49.2	124	110	3600	3800	3.4	5217	5217 A	5217 A	5217
85	150	49.2	124	110	3600	3800	3.4	5217 2Z	5217 A-2Z	5217	5217 2Z
85	150	49.2	142	176	3600	3800	3.7	5217	5217 E	5217	5217
85	180	73	195	176	3200	3400	8.3	3317	3317 A	3317 A	3317
85	180	73	195	176	3200	3400	8.3	5317	5317 A	5317 A	5317
90	160	52.4	130	120	3400	3600	4.15	3218	3218 A	3218 A	3218
90	160	52.4	130	120	3400	3600	4.15	5218 2Z	5218 A-2Z	5218	5218 2Z
90	160	52.4	151	193	3400	3600	4.55	5218	5218 E	5218	5218
90	190	73	195	180	3000	3200	9.25	3318	3318 A	3318 A	3318
90	190	73	225	250	3000	3200	10	3318 M	3318 DMA	3318 M	3318 M
90	190	73	195	180	3000	3200	9.25	5318	5318 A	5318 A	5318
95	170	55.6	159	146	3200	3400	5	3219	3219 A	3219 A	3219
95	170	55.6	159	146	3200	3400	5	5219	5219 A	5219 A	5219
95	200	77.8	225	216	2800	3000	11	3319	3319 A	3319 A	3319
95	200	77.8	242	275	2800	3000	12	3319 M	3319 DMA	3319 M	3319 M
100	180	60.3	178	166	3000	3200	6.1	3220	3220 A	3220 A	3220
100	180	60.3	178	166	3000	3200	6.1	5220	5220 A	5220 A	5220
100	215	82.6	255	255	2600	2800	13.5	3320	3320 A	3320 A	3320
100	215	82.6	260	305	2600	2800	15	3320 M	3320 DMA	3320 M	3320 M
110	200	69.8	212	212	2800	2800	8.8	3222	3222 A	3222 A	3222
110	200	69.8	212	212	2800	2800	8.8	5222	5222 A	5222 A	5222
110	240	92.1	291	305	2400	2600	19	3322	3322 A	3322 A	3322
110	240	92.1	307	375	2400	2600	21	3322 M	3322 DMA	3322 M	3322 M

ANGULAR CONTACT BALL BEARINGS Four Point Contact Bearings

Table 36
Bore Diameter 15mm - 75mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynamic C	Static C ₀	Ref. Speed	Limiting Speed		Local	SKF	FAG	NSK
mm	mm	mm	kN		r/min	r/min	kg				
15	35	11	12.7	8.3	22000	36000	0.062	QJ202 M	QJ202 N2MA	QJ202 MPA	QJ202 M
17	40	12	15.9	10.6	19000	30000	0.082	QJ203 M	QJ203 N2MA	QJ203 MPA	QJ203 M
17	47	14	23.4	15	17000	28000	0.14	QJ303 M	QJ303 N2MA	QJ303 MPA	QJ303 M
20	52	15	32	21.6	18000	24000	0.18	QJ304 M	QJ304 MA	QJ304 MPA	QJ304 M
20	52	15	32	21.6	18000	24000	0.18	QJ304 M	QJ304 N2MA	QJ304 MPA	QJ304 M
20	52	15	32	21.6	20000	24000	0.16	QJ304 T	QJ304 N2PHAS	QJ304 TVPB1	QJ304 T
25	52	15	27	21.2	16000	22000	0.16	QJ205 M	QJ205 MA	QJ205 MPA	QJ205 M
25	52	15	27	21.2	16000	22000	0.16	QJ205 M	QJ205 N2MA	QJ205 MPA	QJ205 M
25	62	17	39	28	12000	20000	0.29	QJ305 M	QJ305 MA	QJ305 MPA	QJ305 M
25	62	17	39	28	12000	20000	0.29	QJ305 M	QJ305 N2MA	QJ305 MPA	QJ305 M
30	62	16	37.5	30.5	14000	19000	0.24	QJ206 M	QJ206 MA	QJ206 MPA	QJ206 M
30	62	16	37.5	30.5	14000	19000	0.24	QJ206 M	QJ206 N2MA	QJ206 MPA	QJ206 M
30	72	19	53	41.5	12000	17000	0.42	QJ306 M	QJ306 MA	QJ306 MPA	QJ306 M
30	72	19	53	41.5	12000	17000	0.42	QJ306 M	QJ306 N2MA	QJ306 MPA	QJ306 M
30	72	19	53	41.5	14000	17000	0.37	QJ306 T	QJ306 N2PHAS	QJ306 TVPB1	QJ306 T
35	72	17	49	41.5	12000	17000	0.36	QJ207 M	QJ207 N2MA	QJ207 MPA	QJ207 M
35	80	21	64	51	11000	15000	0.57	QJ307 M	QJ307 MA	QJ307 MPA	QJ307 M
35	80	21	64	51	11000	15000	0.57	QJ307 M	QJ307 N2MA	QJ307 MPA	QJ307 M
35	80	21	64	51	13000	15000	0.48	QJ307 T	QJ307 N2PHAS	QJ307 TVPB1	QJ307 T
40	80	18	56	49	11000	15000	0.45	QJ208 M	QJ208 MA	QJ208 MPA	QJ208 M
40	80	18	56	49	11000	15000	0.45	QJ208 M	QJ208 N2MA	QJ208 MPA	QJ208 M
40	90	23	78	64	10000	14000	0.78	QJ308 M	QJ308 MA	QJ308 MPA	QJ308 M
40	90	23	78	64	10000	14000	0.78	QJ308 M	QJ308 N2MA	QJ308 MPA	QJ308 M
45	85	19	63	56	10000	14000	0.52	QJ209 M	QJ209 MA	QJ209 MPA	QJ209 M
45	100	25	100	83	9000	12000	1.05	QJ309 M	QJ309 MA	QJ309 MPA	QJ309 M
45	100	25	100	83	9000	12000	1.05	QJ309 M	QJ309 N2MA	QJ309 MPA	QJ309 M
45	100	25	100	83	10000	12000	0.9	QJ309 T	QJ309 N2PHAS	QJ309 TVPB1	QJ309 T
50	90	20	65.5	61	9000	13000	0.59	QJ210 M	QJ210 MA	QJ210 MPA	QJ210 M
50	110	27	118	100	8000	11000	1.35	QJ310 M	QJ310 MA	QJ310 MPA	QJ310 M
50	110	27	118	100	9000	11000	1.35	QJ310 T	QJ310 PHAS	QJ310 TVPB1	QJ310 T
55	100	21	85	83	8000	11000	0.77	QJ211 M	QJ211 MA	QJ211 MPA	QJ211 M
55	100	21	85	83	8000	11000	0.77	QJ211 M	QJ211 N2MA	QJ211 MPA	QJ211 M
55	120	29	137	118	7000	10000	1.75	QJ311 M	QJ311 MA	QJ311 MPA	QJ311 M
55	120	29	137	118	7000	10000	1.75	QJ311 M	QJ311 N2MA	QJ311 MPA	QJ311 M
60	110	22	96.5	93	7500	10000	0.99	QJ212 M	QJ212 MA	QJ212 MPA	QJ212 M
60	110	22	96.5	93	7500	10000	0.99	QJ212 M	QJ212 N2MA	QJ212 MPA	QJ212 M
60	110	22	96.5	93	8500	10000	0.89	QJ212 T	QJ212 N2PHAS	QJ212 TVPB1	QJ212 T
60	130	31	156	137	6700	9000	2.15	QJ312 M	QJ312 MA	QJ312 MPA	QJ312 M
60	130	31	156	137	6700	9000	2.15	QJ312 M	QJ312 N2MA	QJ312 MPA	QJ312 M
65	120	23	110	112	6700	9500	1.2	QJ213 M	QJ213 MA	QJ213 MPA	QJ213 M
65	120	23	110	112	6700	9500	1.2	QJ213 M	QJ213 N2MA	QJ213 MPA	QJ213 M
65	140	33	176	156	6300	8500	2.7	QJ313 M	QJ313 MA	QJ313 MPA	QJ313 M
70	125	24	120	122	6300	9000	1.3	QJ214 M	QJ214 MA	QJ214 MPA	QJ214 M
70	125	24	120	122	6300	9000	1.3	QJ214 M	QJ214 N2MA	QJ214 MPA	QJ214 M
70	125	24	120	122	7500	9000	1.19	QJ214 T	QJ214 N2PHAS	QJ214 TVPB1	QJ214 T
70	150	35	200	180	5600	8000	3.15	QJ314 M	QJ314 MA	QJ314 MPA	QJ314 M
70	150	35	200	180	5600	8000	3.15	QJ314 M	QJ314 N2MA	QJ314 MPA	QJ314 M
70	150	35	200	180	6700	8000	2.78	QJ314 T	QJ314 N2PHAS	QJ314 TVPB1	QJ314 T
75	130	25	125	132	6300	8500	1.45	QJ215 M	QJ215 MA	QJ215 MPA	QJ215 M
75	130	25	125	132	6300	8500	1.45	QJ215 M	QJ215 N2MA	QJ215 MPA	QJ215 M



ANGULAR CONTACT BALL BEARINGS

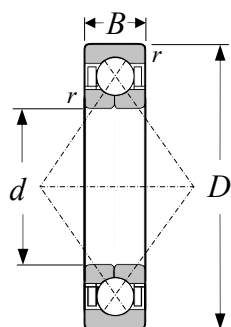
Four Point Contact Bearings

Table 37
Bore Diameter 75mm - 280mm

Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynami c	Static C ₀	Ref. Speed	Limifing Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
75	130	25	125	132	7000	8500	1.27	QJ215 T	QJ215 N2PHAS	QJ215 TVPB1	QJ215 T
75	160	37	216	200	5300	7500	3.9	QJ315 M	QJ315 N2MA	QJ315 MPA	QJ315 M
80	140	26	146	156	5600	8000	1.85	QJ216 M	QJ216 MA	QJ216 MPA	QJ216 M
80	140	26	146	156	5600	8000	1.85	QJ216 M	QJ216 N2MA	QJ216 MPA	QJ216 M
80	170	39	232	228	5000	7000	4.6	QJ316 M	QJ316 N2MA	QJ316 MPA	QJ316 M
85	130	22	85.2	102	5000	8000	1.1	QJ1017 M	QJ1017 N2MA	QJ1017 MPA	QJ1017 M
85	150	28	156	173	5300	7500	2.25	QJ217 M	QJ217 MA	QJ217 MPA	QJ217 M
85	150	28	156	173	5300	7500	2.25	QJ217 M	QJ217 N2MA	QJ217 MPA	QJ217 M
85	180	41	250	255	4800	6700	5.45	QJ317 M	QJ317 N2MA	QJ317 MPA	QJ317 M
90	160	30	186	200	5000	7000	2.75	QJ218 M	QJ218 N2MA	QJ218 MPA	QJ218 M
90	190	43	285	305	4500	6300	6.45	QJ318 M	QJ318 N2MA	QJ318 MPA	QJ318 M
95	170	32	212	232	4800	6700	3.35	QJ219 M	QJ219 N2MA	QJ219 MPA	QJ219 M
95	200	45	305	340	4300	6000	7.45	QJ319 M	QJ319 N2MA	QJ319 MPA	QJ319 M
100	180	34	236	265	4500	6300	4.05	QJ220 M	QJ220 N2MA	QJ220 MPA	QJ220 M
100	215	47	345	400	4000	5600	9.3	QJ320 M	QJ320 N2MA	QJ320 MPA	QJ320 M
105	160	26	124	156	4000	6700	2	QJ1021 M	QJ1021 N2MA	QJ1021 MPA	QJ1021 M
110	170	28	146	186	3800	6300	2.5	QJ1022 M	QJ1022 N2MA	QJ1022 MPA	QJ1022 M
110	200	38	280	325	4000	5600	5.6	QJ222 M	QJ222 N2MA	QJ222 MPA	QJ222 M
110	240	50	390	480	3600	4800	12.5	QJ322 M	QJ322 N2MA	QJ322 MPA	QJ322 M
120	215	40	300	365	3600	5000	6.95	QJ224 M	QJ224 N2MA	QJ224 MPA	QJ224 M
120	260	55	415	530	3200	4500	16	QJ324 M	QJ324 N2MA	QJ324 MPA	QJ324 M
130	230	40	310	400	3400	4800	7.75	QJ226 M	QJ226 N2MA	QJ226 MPA	QJ226 M
130	280	58	455	610	3000	4000	19.5	QJ326 M	QJ326 N2MA	QJ326 MPA	QJ326 M
140	250	42	345	475	3200	4300	9.85	QJ228 M	QJ228 N2MA	QJ228 MPA	QJ228 M
140	300	62	500	695	2800	3800	24	QJ328 M	QJ328 N2MA	QJ328 MPA	QJ328 M
150	225	35	216	305	2800	4500	5.25	QJ1030 M	QJ1030 N2MA	QJ1030 MPA	QJ1030 M
150	270	45	400	570	3000	4000	12.5	QJ230 M	QJ230 N2MA	QJ230 MPA	QJ230 M
150	320	65	530	765	2600	3600	29	QJ330 M	QJ330 N2MA	QJ330 MPA	QJ330 M
160	240	38	247	355	2600	4300	6.45	QJ1032 M	QJ1032 N2MA	QJ1032 MPA	QJ1032 M
160	290	48	450	670	2800	3800	15.5	QJ232 M	QJ232 N2MA	QJ232 MPA	QJ232 M
160	340	68	570	880	2400	3400	34.5	QJ332 M	QJ332 N2MA	QJ332 MPA	QJ332 M
170	310	52	455	720	2600	3400	19.5	QJ234 M	QJ234 N2MA	QJ234 MPA	QJ234 M
170	360	72	655	1040	2200	3200	41.5	QJ334 M	QJ334 N2MA	QJ334 MPA	QJ334 M
180	320	52	475	765	2400	3400	20.5	QJ236 M	QJ236 N2MA	QJ236 MPA	QJ236 M
180	380	75	680	1020	2200	3000	47.5	QJ336 M	QJ336 N2MA	QJ336 MPA	QJ336 M
190	290	46	338	510	2200	3400	11.5	QJ1038 M	QJ1038 N2MA	QJ1038 MPA	QJ1038 M
190	340	55	488	780	1900	3200	23.3	QJ238 M	QJ238 N2MA	QJ238 MPA	QJ238 M
190	400	78	702	1160	1700	2800	49	QJ338 M	QJ338 N2MA	QJ338 MPA	QJ338 M
200	310	51	390	620	2000	3200	15	QJ1040 M	QJ1040 N2MA	QJ1040 MPA	QJ1040 M
200	360	58	540	915	1800	3000	28.5	QJ240 M	QJ240 N2MA	QJ240 MPA	QJ240 M
200	360	70	520	865	1800	3000	32.5	QJ1240 M	QJ1240 N2MA	QJ1240 MPA	QJ1240 M
220	400	78	592	1020	1600	2600	45.5	QJ1244 M	QJ1244 N2MA	QJ1244 MPA	QJ1244 M
220	460	88	904	1660	1500	2400	78	QJ344 M	QJ344 N2/309829	QJ344 MPA	QJ344 M
220	460	88	780	1400	1500	2400	78	QJ344 M	QJ344 N2MA	QJ344 MPA	QJ344 M
240	440	72	650	1200	1500	2400	53	QJ248 M	QJ248 N2MA	QJ248 MPA	QJ248 M
240	440	85	663	1220	1500	2400	61	QJ1248 M	QJ1248 MA/344524	QJ1248 MPA	QJ1248 M
260	480	80	728	1430	1300	2200	68	QJ252 M	QJ252 N2MA	QJ252 MPA	QJ252 M
260	480	90	741	1460	1300	2200	78	QJ1252 M	QJ1252 MA	QJ1252 MPA	QJ1252 M
260	480	90	741	1460	1300	2200	78	QJ1252 M	QJ1252 N2MA	QJ1252 MPA	QJ1252 M
280	420	65	553	1060	1400	2400	33.5	QJ1056 M	QJ1056 N2MA	QJ1056 MPA	QJ1056 M

ANGULAR CONTACT BALL BEARINGS Four Point Contact Bearings

Table 38
Bore Diameter 280mm - 480mm



Principal Dimensions			Basic Load Ratings		Speed Ratings		Mass	Designations			
d	D	B	Dynami c	Static C ₀	Ref. Speed	Limifing Speed		Local	SKF	FAG	NSK
mm			kN		r/min		kg				
280	500	90	728	1460	1300	2000	82	QJ1256 M	QJ1256 N2MA	QJ1256 MPA	QJ1256 M
300	460	74	650	1340	1300	2200	47.5	QJ1060 M	QJ1060 MA	QJ1060 MPA	QJ1060 M
300	460	74	650	1340	1300	2200	47.5	QJ1060 M	QJ1060 N2MA	QJ1060 MPA	QJ1060 M
300	540	98	832	1760	1200	1900	105	QJ1260 M	QJ1260 N2MA	QJ1260 MPA	QJ1260 M
320	480	74	715	1530	1200	2000	50	QJ1064 M	QJ1064 MA	QJ1064 MPA	QJ1064 M
320	480	74	715	1530	1200	2000	50	QJ1064 M	QJ1064 N2MA	QJ1064 MPA	QJ1064 M
320	580	105	923	2040	1100	1700	130	QJ1264 M	QJ1264 N2MA	QJ1264 MPA	QJ1264 M
340	520	82	780	1700	1100	1800	67.5	QJ1068 M	QJ1068 N2MA	QJ1068 MPA	QJ1068 M
340	620	118	1060	2450	1000	1600	165	QJ1268 M	QJ1268 MA/344524	QJ1268 MPA	QJ1268 M
360	540	82	793	1800	1100	1700	70.5	QJ1072 M	QJ1072 N2MA	QJ1072 MPA	QJ1072 M
360	650	122	1110	2600	950	1500	190	QJ1272 M	QJ1272 N2MA	QJ1272 MPA	QJ1272 M
380	560	82	819	1900	1000	1700	73.5	QJ1076 M	QJ1076 N2MA	QJ1076 MPA	QJ1076 M
380	680	132	1170	2850	900	1400	220	QJ1276 M	QJ1276 N2MA	QJ1276 MPA	QJ1276 M
400	600	90	904	2160	950	1500	95.5	QJ1080 M	QJ1080 N2MA	QJ1080 MPA	QJ1080 M
400	720	140	1300	3250	800	1300	265	QJ1280 M	QJ1280 N2MA	QJ1280 MPA	QJ1280 M
420	560	65	637	1600	950	1600	51	QJ1984 M	QJ1984 MA	QJ1984 MPA	QJ1984 M
420	620	90	923	2280	900	1500	99.5	QJ1084 M	QJ1084 N2MA	QJ1084 MPA	QJ1084 M
420	760	150	1430	3750	750	1300	315	QJ1284 M	QJ1284 N2MA	QJ1284 MPA	QJ1284 M
440	600	74	761	1900	900	1500	65	QJ1988 M	QJ1988 N2MA	QJ1988 MPA	QJ1988 M
440	650	94	995	2500	850	1400	115	QJ1088 M	QJ1088 N2MA	QJ1088 MPA	QJ1088 M
440	790	155	1400	3750	750	1200	350	QJ1288 M	QJ1288 N2MA	QJ1288 MPA	QJ1288 M
460	680	100	1040	2650	800	1300	130	QJ1092 M	QJ1092 N2MA	QJ1092 MPA	QJ1092 M
460	830	165	1530	4250	700	1100	415	QJ1292 M	QJ1292 N2MA	QJ1292 MPA	QJ1292 M
480	700	100	1060	2800	750	1300	135	QJ1096 M	QJ1096 N2MA	QJ1096 MPA	QJ1096 M
480	870	170	1680	4750	670	1100	470	QJ1296 M	QJ1296 N2MA	QJ1296 MPA	QJ1296 M

APPENDICES CONTENTS

Conversion Tables, [N – kgf] [kg – lb] [inch – mm]

Tolerance Tables for Shaft Diameters

Tolerance Tables for Housing Bore Diameters



CONVERSION TABLE [N-kgf] [kg-lb]

<i>N</i>	-	<i>kgf</i>	<i>N</i>	-	<i>kgf</i>
9.8066	1	0.1020	500.14	51	5.2006
19.613	2	0.2039	509.95	52	5.3025
29.420	3	0.3059	519.75	53	5.4045
39.227	4	0.4079	529.56	54	5.5065
49.033	5	0.5099	539.37	55	5.6084
58.840	6	0.6118	549.17	56	5.7104
68.647	7	0.7138	558.98	57	5.8124
78.453	8	0.8158	568.79	58	5.9144
88.260	9	0.9177	578.59	59	6.0163
98.066	10	1.0197	588.40	60	6.1183
107.87	11	1.1217	598.21	61	6.2203
117.68	12	1.2237	608.01	62	6.3222
127.49	13	1.3256	617.82	63	6.4242
137.29	14	1.4276	627.63	64	6.5262
147.10	15	1.5296	637.43	65	6.6282
156.91	16	1.6315	647.24	66	6.7301
166.71	17	1.7335	657.05	67	6.8321
176.52	18	1.8355	666.85	68	6.9341
186.33	19	1.9375	676.66	69	7.0360
196.13	20	2.0394	686.47	70	7.1380
205.94	21	2.1414	696.27	71	7.2400
215.75	22	2.2434	706.08	72	7.3420
225.55	23	2.3453	715.89	73	7.4439
235.36	24	2.4473	725.69	74	7.5459
245.17	25	2.5493	735.50	75	7.6479
254.97	26	2.6513	745.31	76	7.7498
264.78	27	2.7532	755.11	77	7.8518
274.59	28	2.8552	764.92	78	7.9538
284.39	29	2.9572	774.73	79	8.0558
294.20	30	3.0591	784.53	80	8.1577
304.01	31	3.1611	794.34	81	8.2597
313.81	32	3.2631	804.15	82	8.3617
323.62	33	3.3651	813.95	83	8.4636
333.43	34	3.4670	823.76	84	8.5656
343.23	35	3.5690	833.57	85	8.6676
353.04	36	3.6710	843.37	86	8.7696
362.85	37	3.7729	853.18	87	8.8715
372.65	38	3.8749	862.99	88	8.9735
382.46	39	3.9769	872.79	89	9.0755
392.27	40	4.0789	882.60	90	9.1774
402.07	41	4.1808	892.41	91	9.2794
411.88	42	4.2828	902.21	92	9.3814
421.69	43	4.3848	912.02	93	9.4834
431.49	44	4.4868	921.83	94	9.5853
441.30	45	4.5887	931.63	95	9.6873
451.11	46	4.6907	941.44	96	9.7893
460.91	47	4.7927	951.25	97	9.8912
470.72	48	4.8946	961.05	98	9.9932
480.53	49	4.9966	970.86	99	10.095
490.33	50	5.0986	980.07	100	10.197

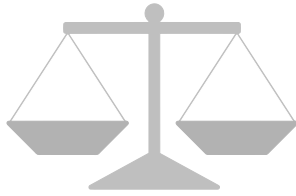
<i>kg</i>	-	<i>lb</i>	<i>kg</i>	-	<i>lb</i>
0.454	1	2.205	23.133	51	112.44
0.907	2	4.409	23.587	52	114.64
1.361	3	6.614	24.040	53	116.84
1.814	4	8.818	24.494	54	119.05
2.268	5	11.023	24.948	55	121.25
2.722	6	13.228	25.401	56	123.46
3.175	7	15.432	25.855	57	125.66
3.629	8	17.637	26.308	58	127.87
4.082	9	19.842	26.762	59	130.07
4.536	10	22.046	27.216	60	132.28
4.990	11	24.251	27.669	61	134.48
5.443	12	26.455	28.123	62	136.69
5.897	13	28.660	28.576	63	138.89
6.350	14	30.865	29.030	64	141.10
6.804	15	33.069	29.484	65	143.30
7.257	16	35.274	29.937	66	145.51
7.711	17	37.479	30.391	67	147.71
8.165	18	39.683	30.844	68	149.91
8.618	19	41.888	31.298	69	152.12
9.072	20	44.092	31.751	70	154.32
9.525	21	46.297	32.205	71	156.53
9.979	22	48.502	32.659	72	158.73
10.433	23	50.706	33.112	73	160.94
10.886	24	52.911	33.566	74	163.14
11.340	25	55.116	34.019	75	165.35
11.793	26	57.320	34.473	76	167.55
12.247	27	59.525	34.927	77	169.76
12.701	28	61.729	35.380	78	171.96
13.154	29	63.934	35.834	79	174.17
13.608	30	66.139	36.287	80	176.37
14.061	31	68.343	36.741	81	178.57
14.515	32	70.548	37.195	82	180.78
14.969	33	72.753	37.648	83	182.98
15.422	34	74.957	38.102	84	185.19
15.876	35	77.162	38.555	85	187.39
16.329	36	79.366	39.009	86	189.60
16.783	37	81.571	39.463	87	191.80
17.237	38	83.776	39.916	88	194.01
17.690	39	85.980	40.370	89	196.21
18.144	40	88.185	40.823	90	198.42
18.597	41	90.390	41.277	91	200.62
19.051	42	92.594	41.730	92	202.83
19.504	43	94.799	42.184	93	205.03
19.958	44	97.003	42.638	94	207.23
20.412	45	99.208	43.091	95	209.44
20.865	46	101.41	43.545	96	211.64
21.319	47	103.62	43.998	97	213.85
21.772	48	105.82	44.452	98	216.05
22.226	49	108.03	44.906	99	218.26
22.680	50	110.23	45.360	100	220.46



CONVERSION TABLE [Inch-mm]

Inch - mm
1" - 10"

Inch Fraction	Inches		0	1	2	3	4	5	6	7	8	9	10
	Decimal	mm											
0	0	0		25.4000	50.8000	76.2000	101.6000	127.0000	152.4000	177.8000	203.2000	228.6000	254.0000
1/64	0.015625	0.3969	25.7969	51.1969	76.5969	101.9969	127.3969	152.7969	178.1969	203.5969	228.9969	254.3969	
1/32	0.03125	0.7938	26.1938	51.5938	76.9938	102.3938	127.7938	153.1938	178.5938	203.9938	229.3938	254.7938	
3/64	0.046875	1.1906	26.5906	51.9906	77.3906	102.7906	128.1906	153.5906	178.9906	204.3906	229.7906	255.1906	
1/16	0.0625	1.5875	26.9875	52.3875	77.7875	103.1875	128.5875	153.9875	179.3875	204.7875	230.1875	255.5875	
5/64	0.078125	1.9844	27.3844	52.7844	78.1844	103.5844	128.9844	154.3844	179.7844	205.1844	230.5844	255.9844	
3/32	0.09375	2.3812	27.7812	53.1812	78.5812	103.9812	129.3812	154.7812	180.1812	205.5812	230.9812	256.3812	
7/64	0.109375	2.7781	28.1781	53.5781	78.9781	104.3781	129.7781	155.1781	180.5781	205.9781	231.3781	256.7781	
1/8	0.125	3.1750	28.5750	53.9750	79.3750	104.7750	130.1750	155.5750	180.9750	206.3750	231.7750	257.1750	
9/64	0.140625	3.5719	28.9719	54.3719	79.7719	105.1719	130.5719	155.9719	181.3719	206.7719	232.1719	257.5719	
5/32	0.15625	3.9688	29.3688	54.7688	80.1688	105.5688	130.9688	156.3688	181.7688	207.1688	232.5688	257.9688	
11/64	0.171875	4.3656	29.7656	55.1656	80.5656	105.9656	131.3656	156.7656	182.1656	207.5656	232.9656	258.3656	
3/16	0.1875	4.7625	30.1625	55.5625	80.9625	106.3625	131.7625	157.1625	182.5625	207.9625	233.3625	258.7625	
13/64	0.203125	5.1594	30.5594	55.9594	81.3594	106.7594	132.1594	157.5594	182.9594	208.3594	233.7594	259.1594	
7/32	0.21875	5.5562	30.9562	56.3562	81.7562	107.1562	132.5562	157.9562	183.3562	208.7562	234.1562	259.5562	
15/64	0.234375	5.9531	31.3531	56.7531	82.1531	107.5531	132.9531	158.3531	183.7531	209.1531	234.5531	259.9531	
1/4	0.25	6.3500	31.7500	57.1500	82.5500	107.9500	133.3500	158.7500	184.1500	209.5500	234.9500	260.3500	
17/64	0.265625	6.7469	32.1469	57.5469	82.9469	108.3469	133.7469	159.1469	184.5469	209.9469	235.3469	260.7469	
9/32	0.28125	7.1438	32.5438	57.9438	83.3438	108.7438	134.1438	159.5438	184.9438	210.3438	235.7438	261.1438	
19/64	0.296875	7.5406	32.9406	58.3406	83.7406	109.1406	134.5406	159.9406	185.3406	210.7406	236.1406	261.5406	
5/16	0.3125	7.9375	33.3375	58.7375	84.1375	109.5375	134.9375	160.3375	185.7375	211.1375	236.5375	261.9375	
21/64	0.328125	8.3344	33.7344	59.1344	84.5344	109.9344	135.3344	160.7344	186.1344	211.5344	236.9344	262.3344	
11/32	0.34375	8.7312	34.1312	59.5312	84.9312	110.3312	135.7312	161.1312	186.5312	211.9312	237.3312	262.7312	
23/64	0.359375	9.1281	34.5281	59.9281	85.3281	110.7281	136.1281	161.5281	186.9281	212.3281	237.7281	263.1281	
3/8	0.375	9.5250	34.9250	60.3250	85.7250	111.1250	136.5250	161.9250	187.3250	212.7250	238.1250	263.5250	
25/64	0.390625	9.9219	35.3219	60.7219	86.1219	111.5219	136.9219	162.3219	187.7219	213.1219	238.5219	263.9219	
13/32	0.40625	10.3188	35.7188	61.1188	86.5188	111.9188	137.3188	162.7188	188.1188	213.5188	238.9188	264.3188	
27/64	0.421875	10.7156	36.1156	61.5156	86.9156	112.3156	137.7156	163.1156	188.5156	213.9156	239.3156	264.7156	
7/16	0.4375	11.1125	36.5125	61.9125	87.3125	112.7125	138.1125	163.5125	188.9125	214.3125	239.7125	265.1125	
29/64	0.453125	11.5094	36.9094	62.3094	87.7094	113.1094	138.5094	163.9094	189.3094	214.7094	240.1094	265.5094	
15/32	0.46875	11.9062	37.3062	62.7062	88.1062	113.5062	138.9062	164.3062	189.7062	215.1062	240.5062	265.9062	
31/64	0.484375	12.3031	37.7031	63.1031	88.5031	113.9031	139.3031	164.7031	190.1031	215.5031	240.9031	266.3031	
1/2	0.5	12.7000	38.1000	63.5000	88.9000	114.3000	139.7000	165.1000	190.5000	215.9000	241.3000	266.7000	
33/64	0.515625	13.0969	38.4969	63.8969	89.2969	114.6969	140.0969	165.4969	190.8969	216.2969	241.6969	267.0969	
17/32	0.53125	13.4938	38.8938	64.2938	89.6938	115.0938	140.4938	165.8938	191.2938	216.6938	242.0938	267.4938	
35/64	0.546875	13.8906	39.2906	64.6906	90.0906	115.4906	140.8906	166.2906	191.6906	217.0906	242.4906	267.8906	
9/16	0.5625	14.2875	39.6875	65.0875	90.4875	115.8875	141.2875	166.6875	192.0875	217.4875	242.8875	268.2875	
37/64	0.578125	14.6844	40.0844	65.4844	90.8844	116.2844	141.6844	167.0844	192.4844	217.8844	243.2844	268.6844	
19/32	0.59375	15.0812	40.4812	65.8812	91.2812	116.6812	142.0812	167.4812	192.8812	218.2812	243.6812	269.0812	
39/64	0.609375	15.4781	40.8781	66.2781	91.6781	117.0781	142.4781	167.8781	193.2781	218.6781	244.0781	269.4781	
5/8	0.625	15.8750	41.2750	66.6750	92.0750	117.4750	142.8750	168.2750	193.6750	219.0750	244.4750	269.8750	
41/64	0.640625	16.2719	41.6719	67.0719	92.4719	117.8719	143.2719	168.6719	194.0719	219.4719	244.8719	270.2719	
21/32	0.65625	16.6688	42.0688	67.4688	92.8688	118.2688	143.6688	169.0688	194.4688	219.8688	245.2688	270.6688	
43/64	0.671875	17.0656	42.4656	67.8656	93.2656	118.6656	144.0656	169.4656	194.8656	220.2656	245.6656	271.0656	
11/16	0.6875	17.4625	42.8625	68.2625	93.6625	119.0625	144.4625	169.8625	195.2625	220.6625	246.0625	271.4625	
45/64	0.703125	17.8594	43.2594	68.6594	94.0594	119.4594	144.8594	170.2594	195.6594	221.0594	246.4594	271.8594	
23/32	0.71875	18.2562	43.6562	69.0562	94.4562	119.8562	145.2562	170.6562	196.0562	221.4562	246.8562	272.2562	
47/64	0.734375	18.6531	44.0531	69.4531	94.8531	120.2531	145.6531	171.0531	196.4531	221.8531	247.2531	272.6531	
3/4	0.75	19.0500	44.4500	69.8500	95.2500	120.6500	146.0500	171.4500	196.8500	222.2500	247.6500	273.0500	
49/64	0.765625	19.4469	44.8469	70.2469	95.6469	121.0469	146.4469	171.8469	197.2469	222.6469	248.0469	273.4469	
25/32	0.78125	19.8438	45.2438	70.6438	96.0438	121.4438	146.8438	172.2438	197.6438	223.0438	248.4438	273.8438	
51/64	0.796875	20.2406	45.6406	71.0406	96.4406	121.8406	147.2406	172.6406	198.0406	223.4406	248.8406	274.2406	
13/16	0.8125	20.6375	46.0375	71.4375	96.8375	122.2375	147.6375	173.0375	198.4375	223.8375	249.2375	274.6375	
53/64	0.828125	21.0344	46.4344	71.8344	97.2344	122.6344	148.0344	173.4344	198.8344	224.2344	249.6344	275.0344	
27/32	0.84375	21.4312	46.8312	72.2312	97.6312	123.0312	148.4312	173.8312	199.2312	224.6312	250.0312	275.4312	
55/64	0.859375	21.8281	47.2281	72.6281	98.0281	123.4281	148.8281	174.2281	199.6281	225.0281	250.4281	275.8281	
7/8	0.875	22.2250	47.6250	73.0250	98.4250	123.8250	149.2250	174.6250	200.0250	225.4250	250.8250	276.2250	
57/64	0.890625	22.6219	48.0219	73.4219	98.8219	124.2219	149.6219	175.0219	200.4219	225.8219	251.2219	276.6219	
29/32	0.90625	23.0188	48.4188	73.8188	99.2188	124.6188	150.0188	175.4188	200.8188	226.2188	251.6188	277.0188	
59/64	0.921875	23.4156	48.8156	74.2156	99.6156	125.0156	150.4156	175.8156	201.2156	226.6156	252.0156	277.4156	
15/16	0.9375	23.8125	49.2125	74.6125	100.0125	125.4125	150.8125	176.2125	201.6125	227.0125	252.4125	277.8125	
61/64	0.953125	24.2094	49.6094	75.0094	100.4094	125.8094	151.2094	176.6094	202.0094	227.4094	252.8094	278.2094	
31/32	0.96875	24.6062	50.0062	75.4062	100.8062	126.2062	151.6062	177.0062	202.4062	227.8062	253.2062	278.6062	
63/64	0.984375	25.0031	50.4031	75.8031	101.2031	126.6031	152.0031	177.4031	202.8031	228.2031	253.6031	279.0031	



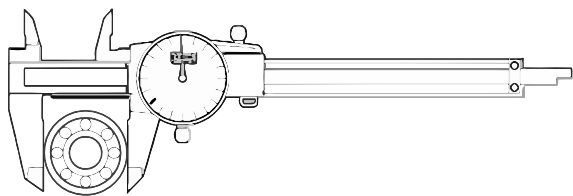
CONVERSION TABLE

Inch – mm
1” – 40”

<i>Inch</i>		<i>Inches</i>									
<i>Fraction</i>	<i>Decimal</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>	<i>17</i>	<i>18</i>	<i>19</i>	<i>20</i>
		<i>mm</i>									
0	0.0000	279.400	304.800	330.200	355.600	381.000	406.400	431.800	457.200	482.600	508.000
1 / 16	0.0625	280.988	306.388	331.788	357.188	382.588	407.988	433.388	458.788	484.188	509.588
1 / 8	0.1250	282.575	307.975	333.375	358.775	384.175	409.575	434.975	460.375	485.775	511.175
3 / 16	0.1875	284.162	309.562	334.962	360.362	385.762	411.162	436.562	461.962	487.362	512.762
1 / 4	0.2500	285.750	311.150	336.550	361.950	387.350	412.750	438.150	463.550	488.950	514.350
5 / 16	0.3125	287.338	312.738	338.138	363.538	388.938	414.338	439.738	465.138	490.538	515.938
3 / 8	0.3750	288.925	314.325	339.725	365.125	390.525	415.925	441.325	466.725	492.125	517.525
7 / 16	0.4375	290.512	315.912	341.312	366.712	392.112	417.512	442.912	468.312	493.712	519.112
1 / 2	0.5000	292.100	317.500	342.900	368.300	393.700	419.100	444.500	469.900	495.300	520.700
9 / 16	0.5625	293.688	319.088	344.488	369.888	395.288	420.688	446.088	471.488	496.888	522.288
5 / 8	0.6250	295.275	320.675	346.075	371.475	396.875	422.275	447.675	473.075	498.475	523.875
11 / 16	0.6875	296.862	322.262	347.662	373.062	398.462	423.862	449.262	474.662	500.062	525.462
3 / 4	0.7500	298.450	323.850	349.250	374.650	400.050	425.450	450.850	476.250	501.650	527.050
13 / 16	0.8125	300.038	325.438	350.838	376.238	401.638	427.038	452.438	477.838	503.238	528.638
7 / 8	0.8750	301.625	327.025	352.425	377.825	403.225	428.625	454.025	479.425	504.825	530.225
15 / 16	0.9375	303.212	328.612	354.012	379.412	404.812	430.212	455.612	481.012	506.412	531.812

<i>Inch</i>		<i>Inches</i>									
<i>Fraction</i>	<i>Decimal</i>	<i>21</i>	<i>22</i>	<i>23</i>	<i>24</i>	<i>25</i>	<i>26</i>	<i>27</i>	<i>28</i>	<i>29</i>	<i>30</i>
		<i>mm</i>									
0	0.0000	533.400	558.800	584.200	609.600	635.000	660.400	685.800	711.200	736.600	762.000
1 / 16	0.0625	534.988	560.388	585.788	611.188	636.588	661.988	687.388	712.788	738.188	763.588
1 / 8	0.1250	536.575	561.975	587.375	612.775	638.175	663.575	688.975	714.375	739.775	765.175
3 / 16	0.1875	538.162	563.562	588.962	614.362	639.762	665.162	690.562	715.962	741.362	766.762
1 / 4	0.2500	539.750	565.150	590.550	615.950	641.350	666.750	692.150	717.550	742.950	768.350
5 / 16	0.3125	541.338	566.738	592.138	617.538	642.938	668.338	693.738	719.138	744.538	769.938
3 / 8	0.3750	542.925	568.325	593.725	619.125	644.525	669.925	695.325	720.725	746.125	771.525
7 / 16	0.4375	544.512	569.912	595.312	620.712	646.112	671.512	696.912	722.312	747.712	773.112
1 / 2	0.5000	546.100	571.500	596.900	622.300	647.700	673.100	698.500	723.900	749.300	774.700
9 / 16	0.5625	547.688	573.088	598.488	623.888	649.288	674.688	700.088	725.488	750.888	776.288
5 / 8	0.6250	549.275	574.675	600.075	625.475	650.875	676.275	701.675	727.075	752.475	777.875
11 / 16	0.6875	550.862	576.262	601.662	627.062	652.462	677.862	703.262	728.662	754.062	779.462
3 / 4	0.7500	552.450	577.850	603.250	628.650	654.050	679.450	704.850	730.250	755.650	781.050
13 / 16	0.8125	554.038	579.438	604.838	630.238	655.638	681.038	706.438	731.838	757.238	782.638
7 / 8	0.8750	555.625	581.025	606.425	631.825	657.225	682.625	708.025	733.425	758.825	784.225
15 / 16	0.9375	557.212	582.612	608.012	633.412	658.812	684.212	709.612	735.012	760.412	785.812

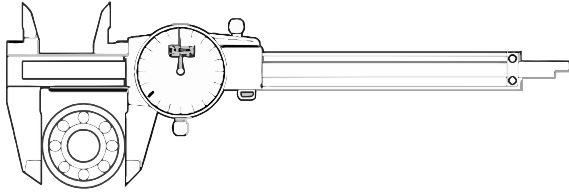
<i>Inch</i>		<i>Inches</i>									
<i>Fraction</i>	<i>Decimal</i>	<i>31</i>	<i>32</i>	<i>33</i>	<i>34</i>	<i>35</i>	<i>36</i>	<i>37</i>	<i>38</i>	<i>39</i>	<i>40</i>
		<i>mm</i>									
0	0.0000	787.400	812.800	838.200	863.600	889.000	914.400	939.800	965.200	990.600	1016.000
1 / 16	0.0625	788.988	814.388	839.788	865.188	890.588	915.988	941.388	966.788	992.188	1017.588
1 / 8	0.1250	790.575	815.975	841.375	866.775	892.175	917.575	942.975	968.375	993.775	1019.175
3 / 16	0.1875	792.162	817.562	842.962	868.362	893.762	919.162	944.562	969.962	995.362	1020.762
1 / 4	0.2500	793.750	819.150	844.550	869.950	895.350	920.750	946.150	971.550	996.950	1022.350
5 / 16	0.3125	795.338	820.738	846.138	871.538	896.938	922.338	947.738	973.138	998.538	1023.938
3 / 8	0.3750	796.925	822.325	847.725	873.125	898.525	923.925	949.325	974.725	1000.125	1025.525
7 / 16	0.4375	798.512	823.912	849.312	874.712	900.112	925.512	950.912	976.312	1001.712	1027.112
1 / 2	0.5000	800.100	825.500	850.900	876.300	901.700	927.100	952.500	977.900	1003.300	1028.700
9 / 16	0.5625	801.688	827.088	852.488	877.888	903.288	928.688	954.088	979.488	1004.888	1030.288
5 / 8	0.6250	803.275	828.675	854.075	879.475	904.875	930.275	955.675	981.075	1006.475	1031.875
11 / 16	0.6875	804.862	830.262	855.662	881.062	906.462	931.862	957.262	982.662	1008.062	1033.462
3 / 4	0.7500	806.450	831.850	857.250	882.650	908.050	933.450	958.850	984.250	1009.650	1035.050
13 / 16	0.8125	808.038	833.438	858.838	884.238	909.638	935.038	960.438	985.838	1011.238	1036.638
7 / 8	0.8750	809.625	835.025	860.425	885.825	911.225	936.625	962.025	987.425	1012.825	1038.225
15 / 16	0.9375	811.212	836.612	862.012	887.412	912.812	938.212	963.621	989.012	1014.412	1039.812



TOLERANCE TABLES
Tolerances for Shaft Diameters

units : μm

Diameter (mm)		Δ_{dmp}	d6	e6	f6	g5	g6	h5	h6	h7	h8	h9	h10	js5	js6	j5	j6	j7	k5	k6	k7	m5	m6	n6	p6
over	incl																								
3	6	0	-30	-20	-10	-4	-4	0	0	0	0	0	0	± 2.5	± 4.0	+3	+6	+8	+6	+9	+13	+9	+12	+16	+20
		-8	-38	-28	-18	-9	-12	-5	-8	-12	-18	-30	-48			-2	-2	-4	+1	+1	+1	+4	+4	+8	+12
6	10	0	-40	-25	-13	-5	-5	0	0	0	0	0	0	± 3.0	± 4.5	+4	+7	+10	+7	+10	+16	+12	+15	+19	+24
		-8	-49	-34	-22	-11	-14	-6	-9	-15	-22	-36	-58			-2	-2	-5	+1	+1	+1	+6	+6	+10	+15
10	18	0	-50	-32	-16	-6	-6	0	0	0	0	0	0	± 4.0	± 5.5	+5	+8	+12	+9	+12	+19	+15	+18	+23	+29
		-8	-61	-43	-27	-14	-17	-8	-11	-18	-27	-43	-70			-3	-3	-6	+1	+1	+1	+7	+7	+12	+18
18	30	0	-65	-40	-20	-7	-7	0	0	0	0	0	0	± 4.5	± 6.5	+5	+9	+13	+11	+15	+23	+17	+21	+28	+35
		-10	-78	-53	-33	-16	-20	-9	-13	-21	-33	-52	-84			-4	-4	-8	+2	+2	+2	+8	+8	+15	+22
30	50	0	-80	-50	-25	-9	-9	0	0	0	0	0	0	± 5.5	± 8.0	+6	+11	+15	+13	+18	+27	+20	+25	+33	+42
		-12	-96	-66	-41	-20	-25	-11	-16	-25	-39	-62	-100			-5	-5	-10	+2	+2	+2	+9	+9	+17	+26
50	80	0	-100	-60	-30	-10	-10	0	0	0	0	0	0	± 6.5	± 9.5	+6	+12	+18	+15	+21	+32	+24	+30	+39	+51
		-15	-119	-79	-49	-23	-29	-13	-19	-30	-46	-74	-120			-7	-7	-12	+2	+2	+2	+11	+11	+20	+32
80	120	0	-120	-72	-36	-12	-12	0	0	0	0	0	0	± 7.5	± 11.0	+6	+13	+20	+18	+25	+38	+28	+35	+45	+59
		-20	-142	-94	-58	-27	-34	-15	-22	-35	-54	-87	-140			-9	-9	-15	+3	+3	+3	+13	+13	+23	+37
120	180	0	-145	-85	-43	-14	-14	0	0	0	0	0	0	± 9.0	± 12.5	+7	+14	+22	+21	+28	+43	+33	+40	+52	+68
		-25	-170	-110	-68	-32	-39	-18	-25	-40	-63	-100	-160			-11	-11	-18	+3	+3	+3	+15	+15	+27	+43
180	250	0	-170	-100	-50	-15	-15	0	0	0	0	0	0	± 10.0	± 14.5	+7	+16	+25	+24	+33	+50	+37	+46	+60	+79
		-30	-199	-129	-79	-35	-44	-20	-29	-46	-72	-115	-185			-13	-13	-21	+4	+4	+4	+17	+17	+31	+50
250	315	0	-190	-110	-56	-17	-17	0	0	0	0	0	0	± 11.5	± 16.0	+7	± 16	± 26	+27	+36	+56	+43	+52	+66	+88
		-35	-222	-142	-88	-40	-49	-23	-32	-52	-81	-130	-210			-16			+4	+4	+4	+20	+20	+34	+56
315	400	0	-210	-125	-62	-18	-18	0	0	0	0	0	0	± 12.5	± 18.0	+7	± 18	+29	+29	+40	+61	+46	+57	+73	+98
		-40	-246	-161	-98	-43	-54	-25	-36	-57	-89	-140	-230			-18		-28	+4	+4	+4	+21	+21	+37	+62
400	500	0	-230	-135	-68	-20	-20	0	0	0	0	0	0	± 13.5	± 20.0	+7	± 20	+31	+32	+45	+68	+50	+63	+80	+108
		-45	-270	-175	-108	-47	-60	-27	-40	-63	-97	-155	-250			-20		-32	+5	+5	+5	+23	+23	+40	+68
500	630	0	-260	-145	-76	-	-22	-	0	0	0	0	0	-	± 22.0	-	-	-	-	+44	+70	-	+70	+88	+122
		-50	-304	-189	-120	-	-66	-	-44	-70	-110	-175	-280							0	0	-	+26	+44	+78
630	800	0	-290	-160	-80	-	-24	-	0	0	0	0	0	-	± 25.0	-	-	-	-	+50	+80	-	+80	+100	+138
		-75	-340	-210	-130	-	-74	-	-50	-80	-125	-200	-320							0	0	-	+30	+50	+88
800	1000	0	-320	-170	-86	-	-26	-	0	0	0	0	0	-	± 28.0	-	-	-	-	+56	+90	-	+90	+112	+156
		-100	-376	-226	-142	-	-82	-	-56	-90	-140	-230	-360							0	0	-	+34	+56	+100
1000	1250	0	-350	-195	-98	-	-28	-	0	0	0	0	0	-	± 33.0	-	-	-	-	+66	+105	-	+106	+132	+186
		-125	-416	-261	-164	-	-94	-	-66	-105	-165	-260	-420							0	0	-	+40	+66	+120
1250	1600	0	-390	-220	-110	-	-30	-	0	0	0	0	0	-	± 39.0	-	-	-	-	+78	+125	-	+126	+156	+218
		-160	-468	-298	-188	-	-108	-	-78	-125	-195	-310	-500							0	0	-	+48	+78	+140
1600	2000	0	-430	-240	-120	-	-32	-	0	0	0	0	0	-	± 46.0	-	-	-	-	+92	+150	-	+150	+184	+262
		-200	-522	-332	-212	-	-124	-	-92	-150	-230	-370	-600							0	0	-	+58	+92	+170



TOLERANCE TABLES
Tolerances for
Housing Bore Diameters

units : μm

Diameters (mm)		Δ_{Dmp}	E6	F6	F7	G6	G7	H6	H7	H8	J6	J7	JS6	JS7	K5	K6	K7	M5	M6	M7	N5	N6	N7	P6	P7
over	incl																								
10	18	0	+43	+27	+34	+17	+24	+11	+18	+27	+6	+10	± 5.5	± 9	+2	+2	+6	-4	-4	0	-9	-9	-5	-15	-11
		-8	+32	+16	+16	+6	+6	0	0	0	-5	-8			-6	-9	-12	-12	-15	-18	-17	-20	-23	-26	-29
18	30	0	+53	+33	+41	+20	+28	+13	+21	+33	+8	+12	± 6.5	± 10.5	+1	+2	+6	-5	-4	0	-12	-11	-7	-18	-14
		-9	+40	+20	+20	+7	+7	0	0	0	-5	-9			-8	-11	-15	-14	-17	-21	-21	-24	-28	-31	-35
30	50	0	+66	+41	+50	+25	+34	+16	+25	+39	+10	+14	± 8	± 12.5	+2	+3	+7	-5	-4	0	-13	-12	-8	-21	-17
		-11	+50	+25	+25	+9	+9	0	0	0	-6	-11			-9	-13	-18	-16	-20	-25	-24	-28	-33	-37	-42
50	80	0	+79	+49	+60	+29	+40	+19	+30	+46	+13	+18	± 9.5	± 15	+3	+4	+9	-6	-5	0	-15	-14	-9	-26	-21
		-13	+60	+30	+30	+10	+10	0	0	0	-6	-12			-10	-15	-21	-19	-24	-30	-28	-33	-39	-45	-51
80	120	0	+94	+58	+71	+34	+47	+22	+35	+54	+16	+22	± 11	± 17.5	+2	+4	+10	-8	-6	0	-18	-16	-10	-30	-24
		-15	+72	+36	+36	+12	+12	0	0	0	-6	-13			-13	-18	-25	-23	-28	-35	-33	-38	-45	-52	-59
120	150	0	+110	+68	+83	+39	+54	+25	+40	+63	+18	+26	± 12.5	± 20	+3	+4	+12	-9	-8	0	-21	-20	-12	-36	-28
		-18	+85	+43	+43	+14	+14	0	0	0	-7	-14			-15	-21	-28	-27	-33	-40	-39	-45	-52	-61	-68
150	180	0	+110	+68	+83	+39	+54	+25	+40	+63	+18	+26	± 12.5	± 20	+3	+4	+12	-9	-8	0	-21	-20	-12	-36	-28
		-25	+85	+43	+43	+14	+14	0	0	0	-7	-14			-15	-21	-28	-27	-33	-40	-39	-45	-52	-61	-68
180	250	0	+129	+79	+96	+44	+61	+29	+46	+72	+22	+30	± 14.5	± 23	+2	+5	+13	-11	-8	0	-25	-22	-14	-41	-33
		-30	+100	+50	+50	+15	+15	0	0	0	-7	-16			-18	-24	-33	-31	-37	-46	-45	-51	-60	-70	-79
250	315	0	+142	+88	+108	+49	+69	+32	+52	+81	+25	+36	± 16	± 26	+3	+5	+16	-13	-9	0	-27	-25	-14	-47	-36
		-35	+110	+56	+56	+17	+17	0	0	0	-7	-16			-20	-27	-36	-36	-41	-52	-50	-57	-66	-79	-88
315	400	0	+161	+98	+119	+54	+75	+36	+57	+89	+29	+39	± 18	± 28.5	+3	+7	+17	-14	-10	0	-30	-26	-16	-51	-41
		-40	+125	+62	+62	+18	+18	0	0	0	-7	-18			-22	-29	-40	-39	-46	-57	-55	-62	-73	-87	-98
400	500	0	+175	+108	+131	+60	+83	+40	+63	+97	+33	+43	± 20	± 31.5	+2	+8	+18	-16	-10	0	-33	-27	-17	-55	-45
		-45	+135	+68	+68	+20	+20	0	0	0	-7	-20			-25	-32	-45	-43	-50	-63	-60	-67	-80	-95	-108
500	630	0	+189	+120	+146	+66	+92	+44	+70	+110	-	-	± 22	± 35	-	0	0	-	-26	-26	-	-44	-44	-78	-78
		-50	+145	+76	+76	+22	+22	0	0	0	-	-			-	-44	-70	-	-70	-96	-	-88	-114	-122	-148
630	800	0	+210	+130	+160	+74	+104	+50	+80	+125	-	-	± 25	± 40	-	0	0	-	-30	-30	-	-50	-50	-88	-88
		-75	+160	+80	+80	+24	+24	0	0	0	-	-			-	-50	-80	-	-80	-110	-	-100	-130	-138	-168
800	1000	0	+226	+142	+176	+82	+116	+56	+90	+140	-	-	± 28	± 45	-	0	0	-	-34	-34	-	-56	-56	-100	-100
		-100	+170	+86	+86	+26	+26	0	0	0	-	-			-	-56	-90	-	-90	-124	-	-112	-146	-156	-190
1000	1250	0	+261	+164	+203	+94	+133	+66	+105	+165	-	-	± 33	± 52.5	-	0	0	-	-40	-40	-	-66	-66	-120	-120
		-125	+195	+98	+98	+28	+28	0	0	0	-	-			-	-66	-105	-	-106	-145	-	-132	-171	-186	-225
1250	1600	0	+298	+188	+235	+108	+155	+78	+125	+195	-	-	± 39	± 62.5	-	0	0	-	-48	-48	-	-78	-78	-140	-140
		-160	+220	+110	+110	+30	+30	0	0	0	-	-			-	-78	-125	-	-126	-173	-	-156	-203	-218	-265
1600	2000	0	+332	+212	+270	+124	+182	+92	+150	+230	-	-	± 46	± 75	-	0	0	-	-58	-58	-	-92	-92	-170	-170
		-200	+240	+120	+120	+32	+32	0	0	0	-	-			-	-92	-150	-	-150	-208	-	-184	-242	-262	-320
2000	2500	0	+370	+240	+305	+144	+209	+110	+175	+280	-	-	± 55	± 87.5	-	0	0	-	-68	-68	-	-110	-110	-195	-195
		-250	+260	+130	+130	+34	+34	0	0	0	-	-			-	-110	-175	-	-178	-243	-	-220	-285	-305	-370

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